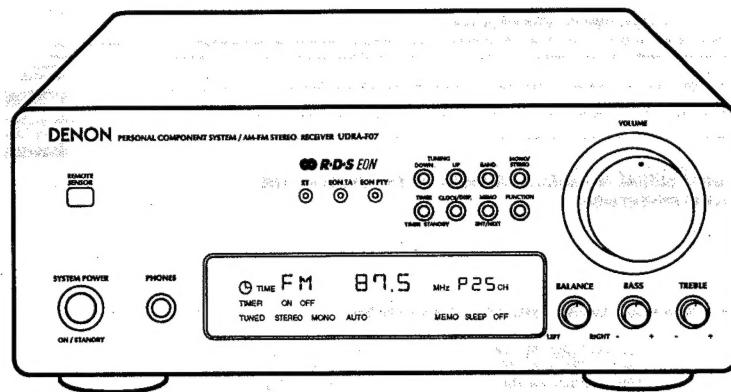


DENON

Hi-Fi Personal Component System

SERVICE MANUAL MODEL UDRA-F07 AM-FM STEREO RECEIVER

For Europe Model



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• Some illustrations using in this service manual are slightly different from the actual set.

NIPPON COLUMBIA CO., LTD.

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Check that the following parts are included in the package aside from the main unit:

| | |
|------------------------------------|---|
| • UDRA-F07 (AM-FM stereo receiver) | 1 |
| • Remote control unit (RC-B18) | 1 |
| • R6P/AA batteries | 2 |
| • Operating instructions | 1 |
| • FM antenna | 1 |
| • AM loop antenna | 1 |

1 MAIN FEATURES

• RDS compatible

Compatible with various RDS services, including program service name (PSL), program type identification (PTY), traffic program identification (TP), clock time (CT), radio text message (RT) and enhanced other network (ECN).

• Quality sound with high quality sound

AM/FM tuner + 40W (4.0J channel) DIN high quality amplifier and terminals for large speakers.

• High sound quality, multi-function CD player

Edit function for automatically dividing the tracks on a CD for recording onto sides A and B of a tape.

2 BEFORE USING

Read the following before using the system.

• Before turning on the power

Check again that all connections are correct and that there are no problems with the connection cords. Be sure to unplug the power cord before connecting or disconnecting the connection cords.

• Humming may be produced if this system is set near a TV or other audio equipment. If this happens, try changing the position of the equipment or the connection cords.

• Moving the system

Be sure to remove CDs before moving the system. If a CD is left in the CD player, it may be scratched.

To prevent short-circuits or damage to the connection cords, always unplug the power cord and disconnect all connection cords to other audio equipment.

• Cassette deck with Dolby B, C and HX-Pro circuits

For playback and recording of high quality sound.

• Two types of timers

Two timer settings can be made — everyday and sleep.

• Auto on function

The power turns on automatically and playback begins when the play button on the CD player or the cassette deck or the tuner preset up/down buttons on the remote control unit are pressed.

• Condensation (dew)

Condensation (water droplets) may be produced on internal optical lenses or discs in the following cases:

• Directly after a heater is turned on.

• When the system is in a steamy or humid room.

• When the system is moved abruptly from a cold place (room) to a warm room.

• Should condensation occur

The signals on the disc cannot be read and the system will not function properly. Remove the disc and let the system set with the power on. The condensation will evaporate in one hour or less, at which time the system will function normally.

• Note that some of the illustrations used for explanations in this manual may differ from the actual system.

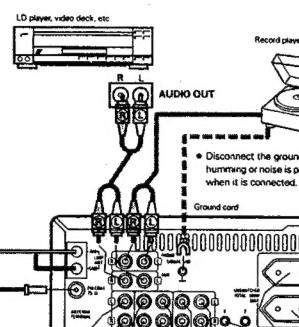
4

4 CONNECTIONS

NOTE:

This system includes digital circuitry which may cause interference such as color blotching or changes in the color on TVs. If this happens, move the system and the TV as far apart as possible.

AM loop antenna



Use a record player with an MM cartridge.

Record player

AUX IN

AUDIO OUT

Ground card

• Disconnect the ground card if humming or noise is produced when it is connected.

Ground card

AM-FM Stereo Receiver (UDRA-F07)

Power plug AC 230 V 50 Hz (Plug into a power outlet)

Power cord (for U.K. model)

Power cord

5 PART NAMES, FUNCTIONS AND DISPLAYS

RECEIVER

1 REMOTE SENSOR
When operating the remote control unit, point it at the receiver.

2 RT Indicator
This lights in green when a radio station offering an RT service is tuned in. The indicator lights in red when the RT mode is selected. When the RT message is displayed, the indicator flashes in green.

3 EON TA Indicator
This lights in green when an EON station with traffic announcements is being received. When the EON TA mode is selected, the indicator lights in red. The indicator flashes in green when another broadcast station in the same network is automatically tuned in and a traffic announcement is being received.

4 EON PTY Indicator
This lights in green when an EON station with PTY information is being received. When the EON PTY mode is selected, the indicator lights in red. The indicator flashes in green when another broadcast station in the same network is automatically tuned in and a broadcast of the desired program type is being received.

5 TUNING UP and DOWN buttons
These buttons are used to select AM and FM stations and to set the clock and timer.

6 BAND (AM / FM) selector button
The band switches between AM and FM each time this button is pressed.

7 MONO / STEREO selector button
AUTO mode: Use this mode to receive programs in stereo. The sound and the indicators on the display automatically switch between monaural ("MONO") and stereo ("STEREO") according to whether the program is being broadcast in monaural or stereo.

MONO mode: Use this mode to receive programs in monaural, regardless of whether they are being broadcast in monaural or stereo. Set this mode if there is much noise or if the signals are weak when receiving stereo programs when "AUTO" is lit.

8 VOLUME control
Use this to adjust the overall volume. The volume increases when the control is turned clockwise (↑) and decreases when it is turned counter-clockwise (↓).

9 SYSTEM POWER switch
This turns the power for the entire system on and off. Press this once to turn the power on, then press again to set the power to the standby mode.

10 PHONES (headphones jack)
Plug the headphones into this jack. No sound is produced from the speakers when headphones are plugged in.

11 Display

12 TIMER / TIMER STANDBY button
Press this when setting the timer and to turn the timer on so that it operates at the set times. When the button is pressed after the timer has been set, the timer standby mark (●) appears on the display. Press again to turn the mark off. The timer will not operate when the (●) mark is off.

13 CLOCK / DISPLAY selector button
This button is used to switch the display between the reception frequency (function) and the clock.

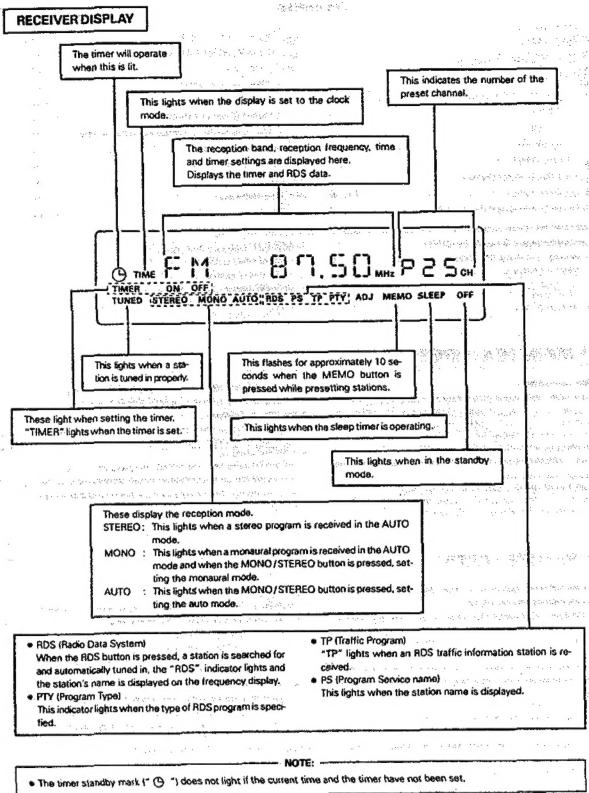
14 MEMO ENT / NEXT button
This button is used to preset AM and FM stations and when setting the timer.

15 FUNCTION (input) selector button
Use this to select the input (function). The input changes in the following order each time this button is pressed: CD, TAPE, TUNER, PHONO, MD and AUX. (The function changes automatically when the system's CD player or cassette deck is played or when a preset channel is recalled on the tuner.)

16 BALANCE control
Use this to adjust the balance of the volume between the left and right channels. When set at the center position, the volume is the same for the left and right channels.

17 BASS control
Use this to adjust the volume of the low frequencies.

18 TREBLE control
Use this to adjust the volume of the high frequencies.



6

6 REMOTE CONTROL UNIT

The UDRA-F07 comes with a system remote control unit (RC-818).

Inserting the batteries

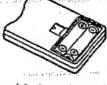
NOTES:

- Use R6P (AA) batteries in this remote control unit.
- Replace the batteries with new ones approximately once each year, though this depends on how frequently the remote control unit is used.
- Replace the batteries with new ones earlier if the remote control unit does not operate even from a short distance.
- Insert the batteries in the proper + and - direction, following the marks in the battery compartment.
- Remove the batteries when not using the remote control unit for extended periods of time.
- To avoid damage and leakage:
 - Do not use a new battery with an old one.
 - Do not use two different types of batteries.
 - Do not short-circuit, take apart, heat or dispose of batteries in flames.
- If the batteries should leak, carefully wipe the liquid out of the battery compartment, then insert new batteries.

① Open the battery compartment cover on the back of the remote control unit. Press the knob and open the cover in the direction of the arrow.



② Insert the two R6P (AA) batteries, following the + and - marks in the battery compartment.



③ Close the cover of the battery compartment.



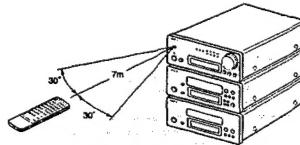
Using the Remote Control Unit

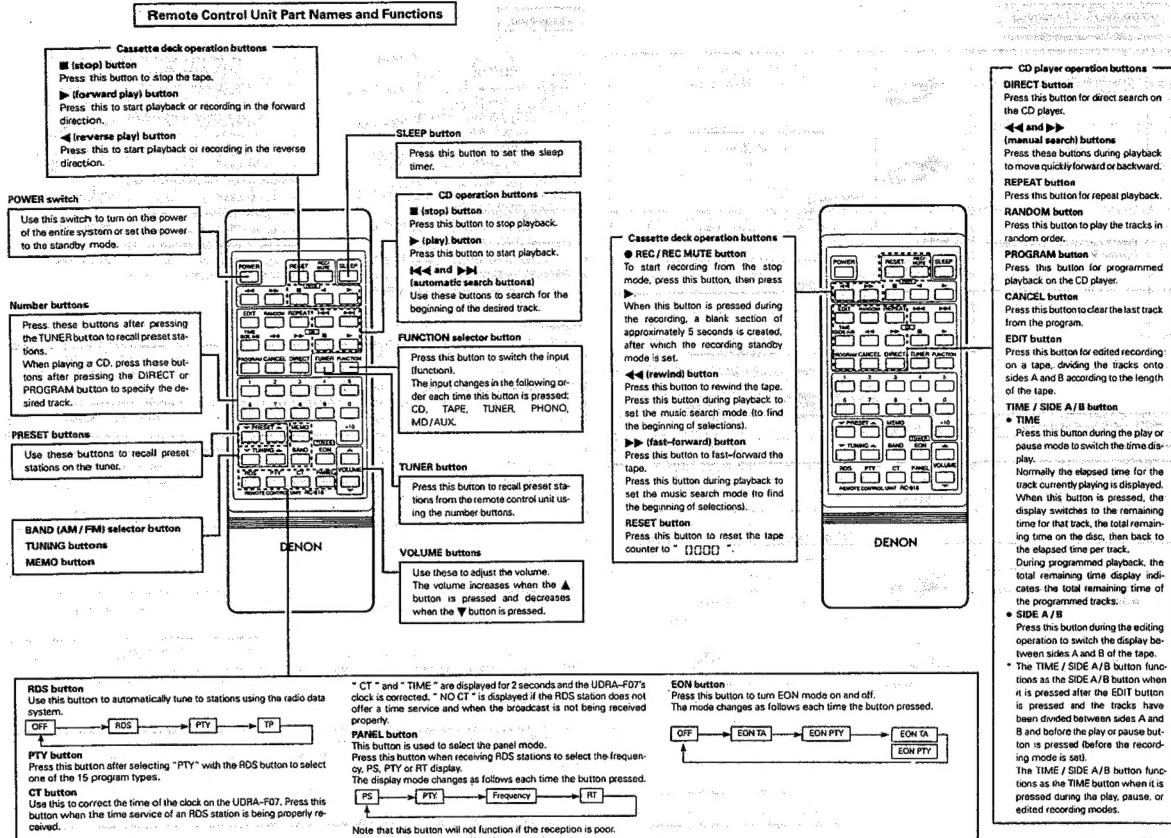
Cautions on Use

- The remote control unit may not operate if the remote sensor is exposed to direct sunlight or the strong light from a lighting fixture, or if there is an obstacle between the remote control unit and the remote sensor.
- Do not press buttons on the remote control unit and on the set at the same time. Doing so could result in malfunction.

- If the remote control unit is pointed away from the remote sensor during continuous operations (such as when turning the volume up or down), the operation will stop. If this happens, point the remote control unit at the remote sensor and press the button again.

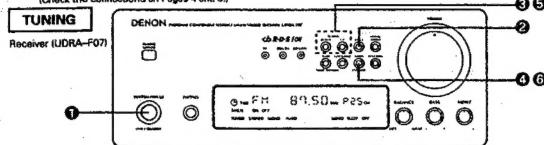
- The remote sensor is located on the receiver. Point the remote control unit at the remote sensor as shown on the diagram when operating it. The remote control unit will operate from a direct distance of approximately 7 meters, but this distance will be shortened if obstacles are present or if operated at an angle. (The remote control unit will operate at an angle of up to 30° in either direction.)





7 LISTENING TO RADIO PROGRAMS

(Check the connections on Pages 4 and 5.)



Example: Tuning in FM 87.50 MHz
(AM stations are tuned in using the same procedure.)

- Set the VOLUME control on the receiver to the minimum position, then press the SYSTEM POWER switch to turn on the power.
- Press the BAND button on the receiver to select the FM band.
- Use the TUNING UP and DOWN buttons to tune the frequency to 87.50. Once the frequency is tuned in, adjust the volume to the desired level using the VOLUME control.

Auto Tuning

- When one of the TUNING buttons is pressed, the frequency changes in steps of 50kHz in the FM band, 9kHz in the AM band.
- If one of the TUNING buttons is held in for over 1 second, the frequency continues to change when the button is released (auto tuning) and stops when a station is tuned in. Tuning will not stop at stations whose reception is poor.
- To stop the auto tuning function, press the UP or DOWN button once.

Presetting AM and FM Stations

Example: Presetting FM 87.50 (currently tuned in) at preset number 3

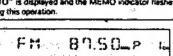
- Press the MEMO ENT/NEXT button. The **MEMO** indicator flashes for 10 seconds.
- Use the UP and DOWN buttons to call out the number at which you want to preset the station (3), or simply press the corresponding number button "3" on the remote control unit.
- Press the MEMO ENT/NEXT button while the **MEMO** indicator is flashing.

Up to 30 AM or FM stations can be preset using this procedure.

Auto Preset Memory Function

(FM ONLY)

This function automatically stores the FM stations which can be received in the area in which the set is being used in the preset memory. Use this function so that the RDS functions can be used more effectively. Also note that the channel memories can be changed at will even after the preset stations have been stored with this function.

| | | |
|---|---|--|
| 1 | Connect the FM antenna and set it so that FM stations can be received. | Refer to page 4 |
| 2 | Press the POWER button to turn on the power while holding in the MEMO ENT/NEXT button. |  "AUTO" is displayed and the MEMO indicator flashes during this operation. |
| 3 | Searching begins automatically, and stations are stored in the preset memory in order, beginning from channel 1 (the operation automatically stops once 40 stations have been set in the memory.) |  When the operation is completed, the station stored at preset number 3 is tuned in. |

NOTES:

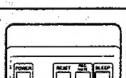
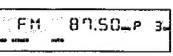
- In addition to the reception frequency, the reception mode (monoaural or auto) is also preset, so check the display when presetting stations.
- If a station is preset at a number where a station is already preset, the previous station is replaced with the new station.
- The preset memory is cleared immediately when the power cord is unplugged, but is cleared if the cord is left unplugged for an extended period of time. If this happens, preset the stations again.

Listening to Preset Stations

The preset stations can be recalled using the number buttons on the remote control unit. Also, if the following operation is performed when the system power is off, the power automatically turns on and the radio is played. (Auto on function)

Example: Listening to the station preset at number 3

(This operation is only possible from the remote control unit.)

| | | |
|---|--|---|
| 1 | Press the TUNER button on the remote control unit. |  |
| 2 | Press button "3" on the remote control unit. |  |

Using the RDS functions

Receiving RDS broadcasts (FM only)

| | | | |
|---|--|--|---|
| 1 | Press the BAND button and set the FM band. | | FM 89.50 |
| 2 | Press the RDS button once. | | E - P 35 - I "RDS" blinks |
| 3 | Press the AUTO TUNING UP (▲) or DOWN (▼) button. | | FM 89.50 "RDS" displayed |
| 4 | The station is tuned in. | | "RDS" lights after 5 seconds of flashing. Once the station is tuned in, "RDS" flashes for 5 seconds and the program service name is displayed. |

NOTE: If no RDS station is found, "NO PROG" is displayed.

PTY Search

| | | | |
|---|--|--|--|
| 1 | Press the RDS button twice. | | E - P T V - I "PTY" and "RDS" flash, and "E - P T V - I" is displayed. |
| 2 | Press the PTY button to select the type of program. (One of the 15 types listed below can be selected.) | | NEWS "NEWS" displayed |
| 3 | Press the AUTO TUNING UP (▲) or DOWN (▼) button. | | FM 89.50 "RDS" displayed |
| 4 | The station is tuned in. | | "PTY" and "RDS" light after 5 seconds of flashing. Once the station is tuned in, "RDS" and "PTY" flash for 5 seconds and the program service name is displayed. |

NOTE: If no program of the specified type is found, "NO PROG" is displayed.

Programs

| | | | |
|---------|-------------------|----------|--------------------|
| NEWS | (News) | VARIETY | (Variety) |
| AFFAIRS | (Current Affairs) | POP M | (Pop Music) |
| INFO | (Information) | ROCK M | (Rock Music) |
| SPORT | (Sport) | MOR M | (M.O.R. Music) |
| EDUCATE | (Education) | LIGHT M | (Light Classics) |
| DRAMA | (Drama) | CLASSICS | (Serious Classics) |
| CULTURE | (Culture) | OTHER M | (Other Music) |
| SCIENCE | (Science) | | |

TP Search

| | | | |
|---|--|--|---|
| 1 | Press the RDS button 3 times. | | E - T P - I "E - T P - I" displayed |
| 2 | Press the AUTO TUNING UP (▲) or DOWN (▼) button. | | FM 89.50 "RDS" displayed |
| 3 | Broadcast reception. | | "TP" and "RDS" light Once the station is tuned in, "TP" and "RDS" light and the program service name is displayed. |

NOTE: "NO PROG" is displayed when there is no traffic information broadcast station.

Receiving FM programs in stereo

- Press the MONO/STEREO selector button to turn on the "AUTO" indicator. When a program being broadcast in stereo is received, the "STEREO" indicator lights and the program is received in stereo.
- If reception is poor and there is much noise in the stereo signals, press the MONO/STEREO selector button to set the monaural mode.

NOTE:

- A humming sound may be heard when using a TV nearby while receiving AM programs. If this happens, move the system as far from the TV as possible.

11

Radio Text (RDS stations only)

| | | | |
|---|---|--|--|
| 1 | When a radio station offering an RT service is tuned in, the RT indicator lights to indicate that the RT service can be received. | | FM 89.50 |
| 2 | To turn the RT mode on, press the PANEL button on the remote control unit until the RT indicator is lit in red. (Refer to page 8) | | WDR 3 RT (Red) |
| 3 | When the station currently tuned in is offering a radio text message service, the message scrolls on the display. | | RADIO The RT indicator blinks in green. |

- When the RT mode is turned on while an RDS radio station not offering an RT service is tuned in, "NO TEXT" flashes on the display, then the mode automatically switches to the PS mode.
- In the same way, the mode automatically switches to the PS mode when the RT service is finished. In this case, the mode automatically switches from the PS mode back to the RT mode when an RT broadcast is resumed.
- The RT mode cannot be set in the AM band or for FM stations not offering RDS broadcasts.
- To turn the RT mode off, press the PANEL button and switch to the desired display mode.

EON TA (RDS stations only)

- When an RDS station is broadcasting RDS information on other stations within the same network and a traffic announcement begins on another station in the same network based on the information (EON = Enhanced Other Network), that network station is automatically tuned in. The previous station is tuned back in once the traffic announcement is over.

| | | | |
|---|--|--|----------------------|
| 1 | When EON TA function is not on while receiving EON TA information, the EON TA indicator lights in green. | | WDR 3 (STATION A) |
| 2 | Press the EON button once, then the EON indicator turns on in red. (Refer to page 9) | | EON TA (Red) |
| 3 | When a traffic announcement starts, that station is automatically tuned in. The EON TA indicator blinks in green. | | WDR 2 (STATION B) |
| 4 | When a traffic announcement is over, the previous station is tuned back in once a programme of a different programme type begins. The EON TA indicator stops blinking, remaining lit in green. The EON TA function also turns off. | | WDR 3 (STATION A) |

- The EON TA function cannot be turned on if the station currently tuned in is not an RDS station. If you attempt to do so, "NO RDS" flashes on the display.
- If the RDS station currently tuned in does not provide an EON service, the EON TA function does not turn on, but "NO EON" flashes on the display.
- To turn the EON TA mode off, press the EON button until the EON TA indicator turns off or lights in green, following the instructions on page 9. If the EON TA mode is turned off under the conditions in 3 on the table above, Station B continues to be tuned in.
- If the tuning button, preset button, band button, system power button or function button is pressed when this mode is set, the mode is turned off.
- When using the EON TA function together with the EON PTY function, press the EON button once after making the settings on the above table. (Refer to page 9.)
- To reset the PTY after setting it, repeat the procedure from step 2.

EON PTY (RDS stations only)

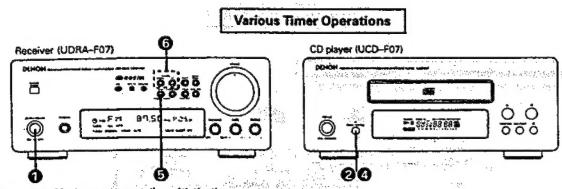
When an RDS station is broadcasting RDS information on other stations within the same network and a programme of the specified programme type (PTY) begins on a station in the same network, that network station is automatically tuned in. Use this function to tune in broadcasts of the desired programme type with priority.

| | | | |
|---|---|--|----------------------|
| 1 | When EON PTY function is not on while receiving EON PTY information, the EON PTY indicator lights in green. | | WDR 3 (STATION A) |
| 2 | Press the EON button twice, then the EON PTY indicator turns on in red. (Refer to page 9) | | EON PTY (Red) |
| 3 | The programme type flashes for approximately 5 seconds. During this time, press the PTY button to select the type of program. (Refer to page 11) | | EON PTY (Red) |
| 4 | Once the desired programme type is selected, set it with the MEMO button. | | POP M (Red) |
| 5 | When a programme of the specified programme type begins on a station in the same network, that station is tuned in. The EON PTY indicator blinks in green. | | WDR 2 (STATION B) |
| 6 | The previous station is tuned back in once a programme of a different programme type begins. The EON PTY indicator stops blinking, remaining lit in green. The EON PTY function also turns off. | | WDR 3 (STATION A) |

- The EON PTY function cannot be turned on if the station currently tuned in is not an RDS station. If you attempt to do so, "NO RDS" flashes on the display.
- If the RDS station currently tuned in does not provide an EON service, the EON PTY function does not turn on, but "NO EON" flashes on the display.
- To turn the EON PTY mode off, press the EON button until the EON PTY indicator turns off or lights in green, following the instructions on page 9. If the EON PTY mode is turned off under the conditions in 5 on the table above, Station B continues to be tuned in.
- If the tuning button, preset button, band button, system power button or function button is pressed when this mode is set, the mode is turned off.
- When using the EON TA function together with the EON PTY function, press the EON button once after making the settings on the above table. (Refer to page 9.)
- To reset the PTY after setting it, repeat the procedure from step 2.

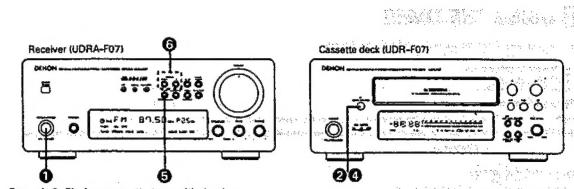
- The EON TA function cannot be turned on if the station currently tuned in is not an RDS station. If you attempt to do so, "NO RDS" flashes on the display.
- 2. In the EON TA and EON PTY modes, if the station is switched from the current station to another station in the network but the signals from the two stations are weak and it cannot be tuned in properly, "WEAK" is displayed and the original station is immediately tuned back in.
- 3. In the EON TA mode, the station does not switch to another station in the network if the current station is broadcasting a traffic announcement.
- 4. In the EON PTY mode, the station does not switch to another station in the network if the current station is broadcasting a programme of the same programme type.
- 5. Since the RDS services offered differ from station to station, some RDS functions may not operate for some stations, but this is not a malfunction.

12



Example 1: Playing a compact disc with the timer

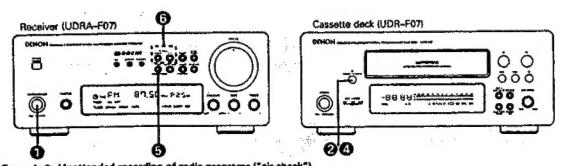
| | | | |
|---|--|--|--|
| 1 | Press the SYSTEM POWER switch on the receiver to turn on the system's power. | | |
| 2 | Press the CD player's ▲ OPEN/CLOSE button to open the disc tray. | | |
| 3 | Load the disc in the disc tray. Refer to Page 21. | | |
| 4 | Press the CD player's ▲ OPEN/CLOSE button again to close the disc tray. | | |
| 5 | Press the receiver's TIMER/TIMER STANDBY button for at least 3 seconds. | | |
| 6 | Use the receiver's UP and DOWN buttons to set the "CD" mode. | | |
| 7 | Now follow steps 6 to 16 under "Setting the Timer" on Page 14. | | |



Example 2: Playing a cassette tape with the timer

| | | | |
|---|---|--|--|
| 1 | Press the SYSTEM POWER switch on the receiver to turn on the system's power. | | |
| 2 | Press the cassette deck's ▲ OPEN/CLOSE button to open the cassette tray. | | |
| 3 | Load the cassette tape in the cassette tray. Refer to Page 17. | | |
| 4 | Press the cassette deck's ▲ OPEN/CLOSE button again to close the cassette tray. | | |
| 5 | Press the receiver's TIMER/TIMER STANDBY button for at least 3 seconds. | | |
| 6 | Use the receiver's UP and DOWN buttons to set the "TAPE" mode. | | |
| 7 | Now follow steps 6 to 16 under "Setting the Timer" on Page 14. | | |

* Check that the direction of tape travel, reverse mode and Dolby NR mode are set as desired.



Example 3: Unattended recording of radio programs ("air check")

| | | | |
|---|---|--|--|
| 1 | Press the SYSTEM POWER switch on the receiver to turn on the system's power. | | |
| 2 | Press the cassette deck's ▲ OPEN/CLOSE button to open the cassette tray. | | |
| 3 | Load the cassette tape in the cassette tray. Refer to Page 17. | | |
| 4 | Press the cassette deck's ▲ OPEN/CLOSE button again to close the cassette tray. | | |
| 5 | Press the receiver's TIMER/TIMER STANDBY button for at least 3 seconds. | | |
| 6 | Use the receiver's UP and DOWN buttons to set the "AIRCH" mode. | | |
| 7 | Now follow steps 6 to 16 under "Setting the Timer" on Page 14. | | |

- Check that the direction of tape travel and reverse mode are set as desired.
- Timer recording starts in the direction indicated on the display.
- Recording is not possible on the leader tape at the beginning of the cassette tape, so to avoid missing any of the program, we recommend setting the timer to approximately 1 minute before the program is scheduled to start.

Setting the Sleep Timer

With this function, the power can be set to turn off after 10 to 60 minutes, in steps of 10 minutes, using the remote control unit.

Example: Setting the power to turn off in 50 minutes
(This operation is only possible from the remote control unit.)

| | | |
|---|---|--|
| 1 | Tuner currently set to FM 87.50 MHz. | |
| 2 | Press the SLEEP button. | |
| 3 | Press the SLEEP button again while the "SLEEP" indicator is flashing. | |
| 4 | The previous display reappears after 5 seconds. The "SLEEP" indicator remains lit, indicating that the sleep timer is functioning. | |

* The time is reset to "60" (60 minutes) if the SLEEP button is pressed again while the sleep timer is functioning.

Cancelling the Sleep Timer

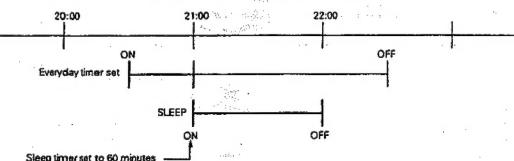
Press the SLEEP button repeatedly until the "SLEEP" indicator turns off.
The sleep timer is also cancelled if the receiver's SYSTEM POWER switch or the POWER switch on the remote control unit is pressed, turning the system power off.

NOTE:

- If the times set with the sleep and everyday timers overlap, the sleep timer has priority.

Order of priority of the sleep and everyday timers

The sleep timer has priority for the off time. (The system operates as indicated by the bold lines.)



Even when the power was turned on with the timer, the power turns off if the remaining time of the sleep timer reaches "60" before the off time set with the everyday timer is reached. If the everyday timer's on time is reached while the sleep timer is functioning, the everyday timer does not function.

16 TROUBLESHOOTING

Check the following once more before assuming there is a problem with the system.

6. Are connections proper?

7. Is the system being operated as explained in the operating instructions?

If the system does not seem to be operating properly, check as shown on the table below. If none of these checks apply to the problem, the system may be malfunctioning. Disconnect the power cord immediately and contact your store of purchase.

| | Symptom | Cause | Countermeasure | Page |
|---------------|---|--|--|------|
| General | Power does not turn on when power switch is pressed. | Power cord is not plugged into a power outlet. | Plug the power cord securely into an outlet. | 5 |
| | No sound is produced from the speakers. | VOLUME control is turned down. | Set the control to an appropriate position. | 6 |
| | Headphones are connected. | Headphones are connected. | Disconnect the headphones. | 6 |
| | Speaker cords are not securely connected. | Speaker cords are not securely connected. | Connect securely. | 5 |
| | Speaker polarities (+ and -) are inverted. | Speaker polarities (+ and -) are inverted. | Connect the speaker cords properly. | 5 |
| | No tone sound is produced, or the position of the instruments is unclear. | Function is not properly set. | Set the desired function using the FUNCTION button. | 6 |
| | A source other than the desired one is heard. | No cassette tape is loaded. | Load a cassette tape. | 17 |
| | Recorder does not start without the REC / MUTE button is pressed. | Accidental erasure protection tabs are broken off. | Cover the tab holes with cellophane tape. | 17 |
| | Sound is broken or no sound is produced during recording, and playback. | Cassettes are dirty. | Clean the heads. | 26 |
| | Humming sound is heard while playing cassette tapes. | Cassette tape is defective. | Replace the cassette tape. | 26 |
| Cassette deck | Recorder does not start without the REC / MUTE button is pressed. | Noise from a TV. | Move the TV away from the system. | 4 |
| | Humming sound is heard while playing cassette tapes. | (Noise may be produced by some types of TVs.) | Turn the TV off. | 4 |
| | Wow (shaky sound) is heavy during recording or playback. | Captions or pitch rollers are dirty. | Clean them. | 26 |
| | Humming sound is heard in AM programs. | Antenna connection is poor. | Change the direction of the antenna. | 4 |
| | Humming sound is heard in FM programs. | Signals from the broadcast station are weak. | Install an outdoor antenna. | 4 |
| | Humming sound is heard in AM programs. | Noise from TV or interference from a broadcast station. | Turn the TV off. | 4 |
| | Humming sound is heard in AM programs. | Signals on the power cord are being modulated by the power source frequency. | Change the direction of the loop antenna. | 4 |
| | Humming sound is heard in FM programs. | Signals on the power cord are being modulated by the power source frequency. | Insert the power cord in the opposite direction. | 4 |
| | Humming sound is heard in AM programs. | Disc is loaded upside-down. | Insert an outdoor antenna. | 4 |
| | Humming sound is heard in FM programs. | Disc is dirty. | Release the disc. | 21 |
| Receiver | Nothing happens when operating buttons are pressed. | Disc is not of the specified type. | Clean the disc. | 26 |
| | Disc stops in the middle of a track and will not play properly. | Disc is loaded upside-down. | Replace with a disc of the specified type. | 4 |
| | Disc stops in the middle of a track and will not play properly. | Foreign object on disc tray. | Release the disc. | 21 |
| | Disc stops in the middle of a track and will not play properly. | Disc is scratched. | Remove the disc and the foreign object. | 21 |
| | Sound is broken. | Disc is scratched. | Replace with an unscratched disc. | 26 |
| | Sound is broken. | Disc, fingerprints, spots, etc. on disc. | Clean the disc. | 26 |
| | Sound is broken. | Disc is scratched. | Replace with an unscratched disc. | 26 |
| | Sound is broken. | Player is in an unstable place and vibrates strongly. | Place the player in a stable place with no vibrations. | 4 |
| | Humming sound is heard when disc is played. | Signals on the power cord are being modulated by the power source frequency. | Insert the power cord in the opposite direction. | 4 |

■ **Protector circuit**
The UDRA-F07 is equipped with a high speed protector circuit. This circuit protects internal parts from being damaged by strong currents generated in the set should the set be operated when the speaker terminals are incompletely connected or short-circuited. If this protector circuit is activated, a relay sound is produced, the output to the speakers is interrupted, and the function and power LEDs flash to indicate that there is a problem. If this should happen, unplug the power cord, check the speaker connections, then plug in the power cord and turn the power back on. After several seconds, a relay sound is heard and the set starts operating properly.

■ The set may not operate properly due to such external influences as lightning or static electricity. If this happens, either turn off the power with the receiver's SYSTEM POWER switch or unplug the power cord, wait approximately 5 seconds, then plug the power cord back in.

SPECIFICATIONS

■ Receiver (UDRA-F07)

Practical maximum output:

Low frequency adjustment range:

High frequency adjustment range:

Reception frequency band:

Reception sensitivity:

FM stereo separation:

Audio input / output jacks:

Power supply:

Power consumption:

Maximum external dimensions:

Weight:

40 W + 40 W (4 Ω / ohms, DIN)

100 Hz ± 8 dB

10 kHz ± 8 dB

FM: 87.50 MHz ~ 108.00 MHz

AM: 522 kHz ~ 1611 kHz

FM: 1.5 μ/75 Ω/ohms

AM: 20 μV

35 dB (1 kHz)

CD input jacks, tape input/output jacks,

MD input/output jacks, Aux input jacks.

6.3 mm headphones jack and phono input jacks

AC 230 V, 50 Hz

110 W

270 (W) × 112 (H) × 327 (D) mm

(10-5/8" x 4-13/32" x 12-7/8")

(including feet, controls and terminals)

5.1 kg (11 lbs. 4 oz)

Infrared pulse

48

Two DC 1.5V R6P/AA batteries

64 (W) × 176 (H) × 18 (D) mm

(2-1/2" x 6-15/16" x 23/32")

130 g (including batteries) (Approx. 4.6 oz)

■ Remote control unit (RC-818)

Remote control system:

Number of buttons:

Power supply:

Maximum external dimensions:

Weight:

* Maximum dimensions include controls, jacks, and covers.

(W) = width, (H) = height, (D) = depth

● For improvement purposes, specifications and functions are subject to change without advanced notice.

■ Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

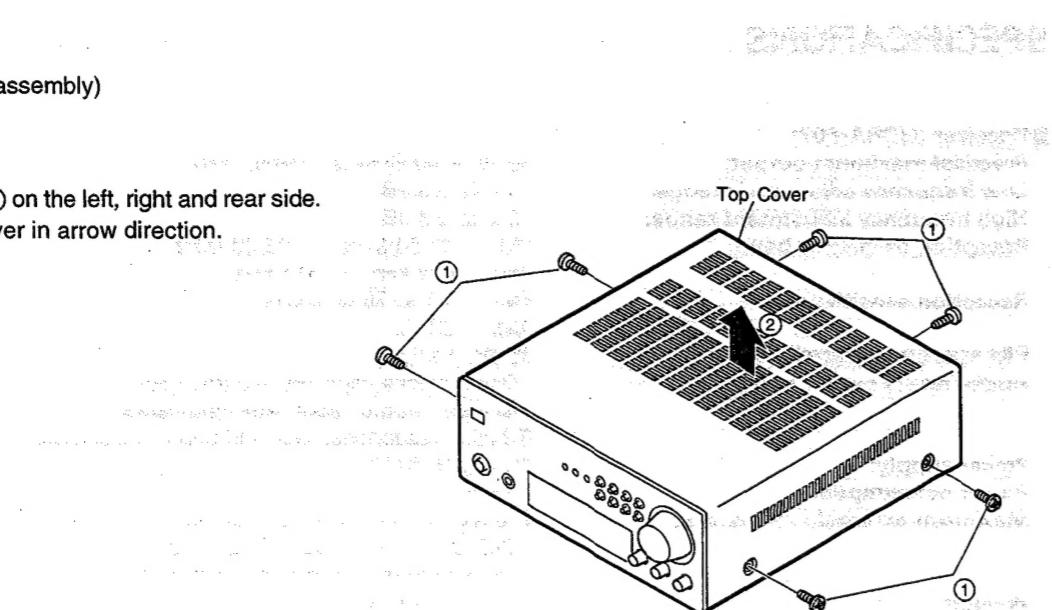
■ "DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

DISASSEMBLY

(To reassemble reverse disassembly)

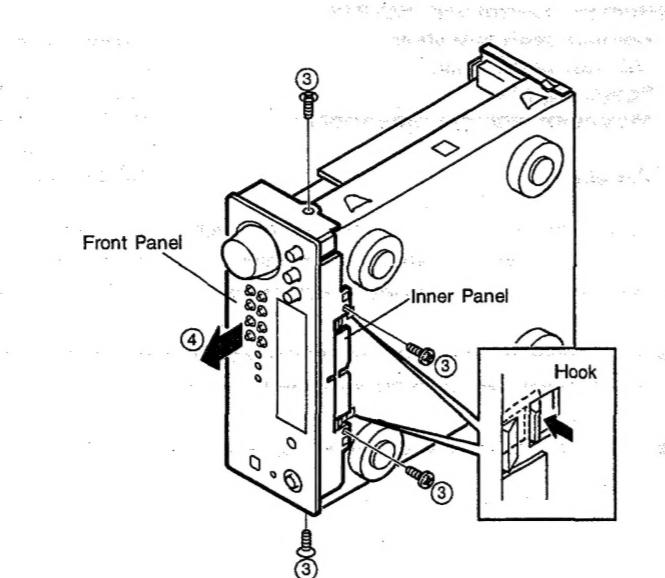
1. Top Cover

- 1) Remove 6 screws ① on the left, right and rear side.
- 2) Detach the Top Cover in arrow direction.



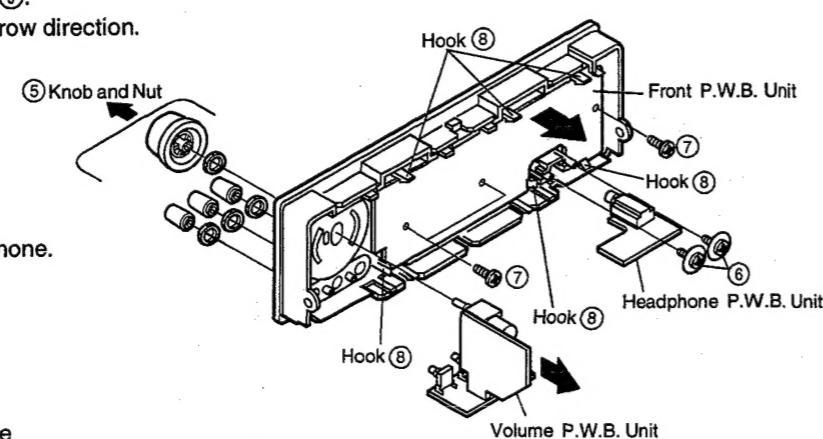
2. Front Panel

- 1) Remove 4 screws ③ on the left, right and bottom side.
- 2) Unfasten 2 hooks and detach the Front Panel with the Inner Panel in arrow direction ④.



3. Volume P.W.B. Unit

- 1) Pull out 4 knobs and remove 4 nuts ⑤.
- 2) Detach the Volume P.W.B. Unit in arrow direction.

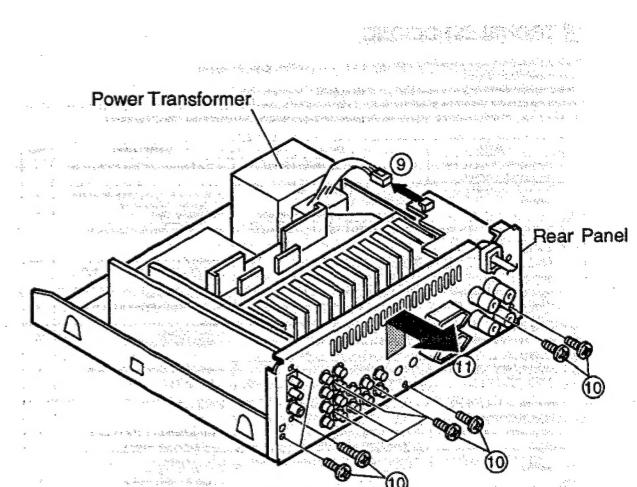


4. Headphone P.W.B. Unit

Remove 2 screws ⑥ securing the Headphone.

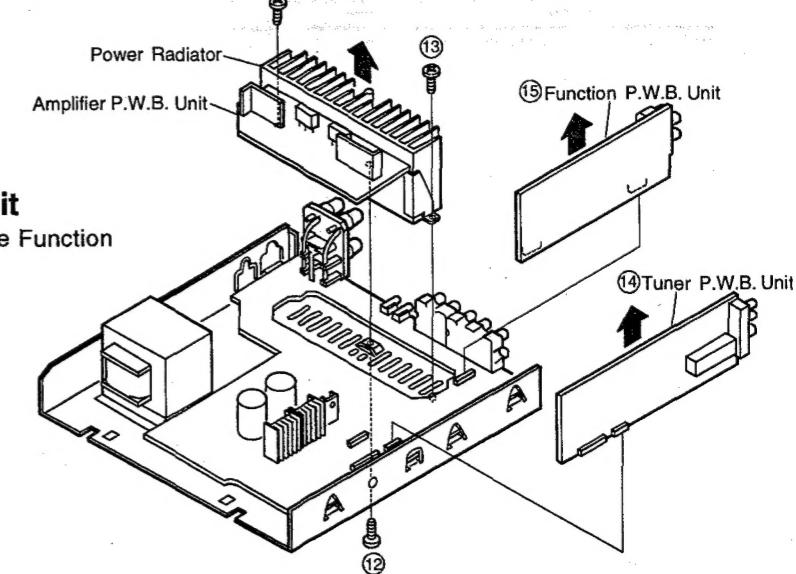
6. Rear Panel

- 1) Disconnect the connector ⑨ connecting with the Power Transformer.
- 2) Remove 10 screws ⑩ and detach the Rear Panel in arrow direction ⑪.



7. Amplifier P.W.B. Unit

- 1) Remove a screw ⑫ fixing the Power Radiator on the bottom.
- 2) Remove 2 screws ⑬ securing Power Radiator.

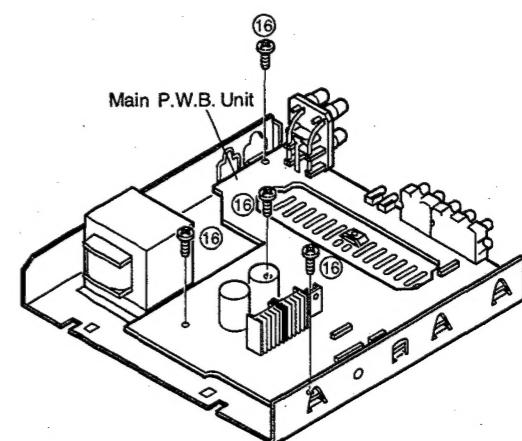


8. Tuner and Function P.W.B. Unit

Pull out the Tuner P.W.B. Unit ⑭ and the Function P.W.B. Unit ⑮ as shown in the figure.

9. Main P.W.B. Unit

Remove 4 screws ⑯ and detach the Main P.W.B. unit.



5. Front P.W.B. Unit

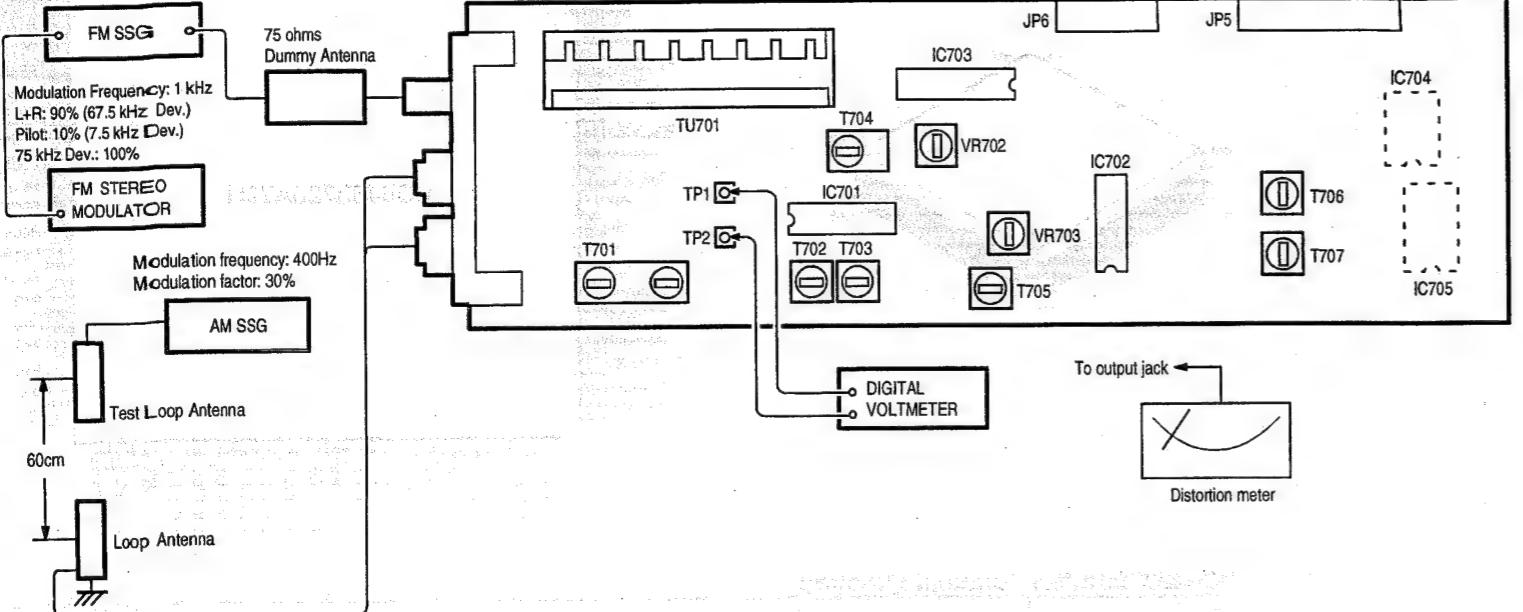
- 1) Remove 3 screws ⑦.
- 2) Unfasten 6 hooks ⑧, and pull out the Front P.W.B. Unit in arrow direction.

ADJUSTMENT

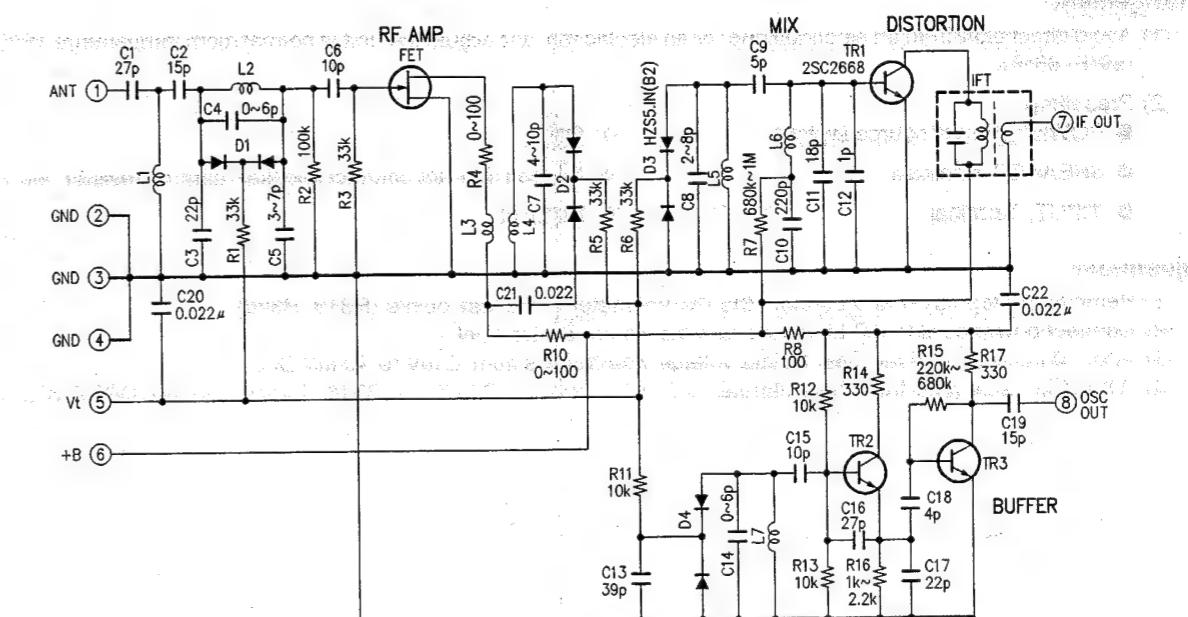
● TUNER SECTION

CONNECTION DIAGRAM OF MEASURING INSTRUMENTS

● FM



FRONT END



FM adjustment (BAND button: FM, MONO / AUTO button: AUTO, RF ATT button: OFF)

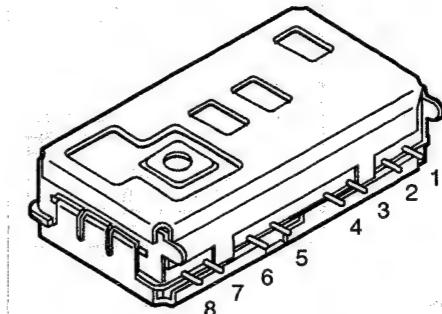
| Step | Adjustment item | Tuning point (channel setting) | Input | | | Output | | Adjustment location | Setting value | Notes |
|-----------------------|-------------------|--------------------------------|--------------------------------|-----------|-------------|--|---------------------|--|----------------------|--|
| | | | Measuring instrument | Frequency | Input level | Modulation | Connection location | | | |
| 1 | FM DC balance | 98.0 MHz | FM S.G. | 98.0 MHz | 60 dB μ | 1 kHz 75 kHz DEV | FM antenna terminal | Digital voltmeter TP1 TP2 | T702 | 0 ±50 mV Perform with monaural modulation signal |
| 2 | Distortion | 98.0 MHz | FM S.G. | 98.0 MHz | 60 dB μ | 1 kHz 75 kHz DEV | FM antenna terminal | Distortion factor meter Output jack | T703 | Minimum distortion Perform with monaural modulation signal |
| Repeat steps 1 and 2. | | | | | | | | | | |
| 4 | Muting level | 98.0 MHz | FM S.G. | 98.0 MHz | 19 dB μ | 1 kHz 75 kHz DEV | FM antenna terminal | Check for the lighting of TUNED | Output jack VR702 | Input level 22 dB μ ±4 dB (Level at which TUNED lights up) |
| 5 | Stereo separation | 98.0 MHz | FM stereo modulator FM S.G. | 98.0 MHz | 60 dB μ | 1 kHz L or R: 67.5 kHz DEV Pilot: 7.5 kHz DEV | FM antenna terminal | VTVM Oscilloscope | Output jack VR703 | Minimum R ch Output Perform with L ch. Input of FM stereo modulator |

● AM

AM adjustment (BAND button: AM)

Note: The AM IFT and MW ANT.-OSC. coil are adjusted individually and normally do not require adjustment.

| | | | | | | | | | | |
|---|-----------|---------------------------------------|-------------|---------|-----------------------------------|-----------|---------------------|--|------------|------------------------------------|
| 1 | IF | Clear frequency (without a broadcast) | AM IF sweep | 455 kHz | Level at which AGC is not applied | — | AM antenna terminal | Oscilloscope ⊕IC701 Output terminal Pin ⑭ ⊖Q716 (Base) | T704 | Waveform maximum and symmetry |
| 2 | Band edge | 522 kHz | — | — | — | — | Digital voltmeter | ⊕Q714(collector) ⊖GND | T701 Black | 1.2V ±0.2V |
| | | 1611 kHz | | | | | | | — | Approx. 7.5V No place to adjust |
| 3 | Tracking | 603 kHz | AM S.G. | 603 kHz | Level at which AGC is not applied | 400Hz 30% | Loop antenna | VTVM Output terminal | T701 Red | maximum output |



External Terminals

1. ANT
2. GND
3. GND
4. GND
5. Vt
6. +B
7. IF OUT
8. OSC OUT

● AUDIO SECTION

Measuring Instruments Required for the adjustments

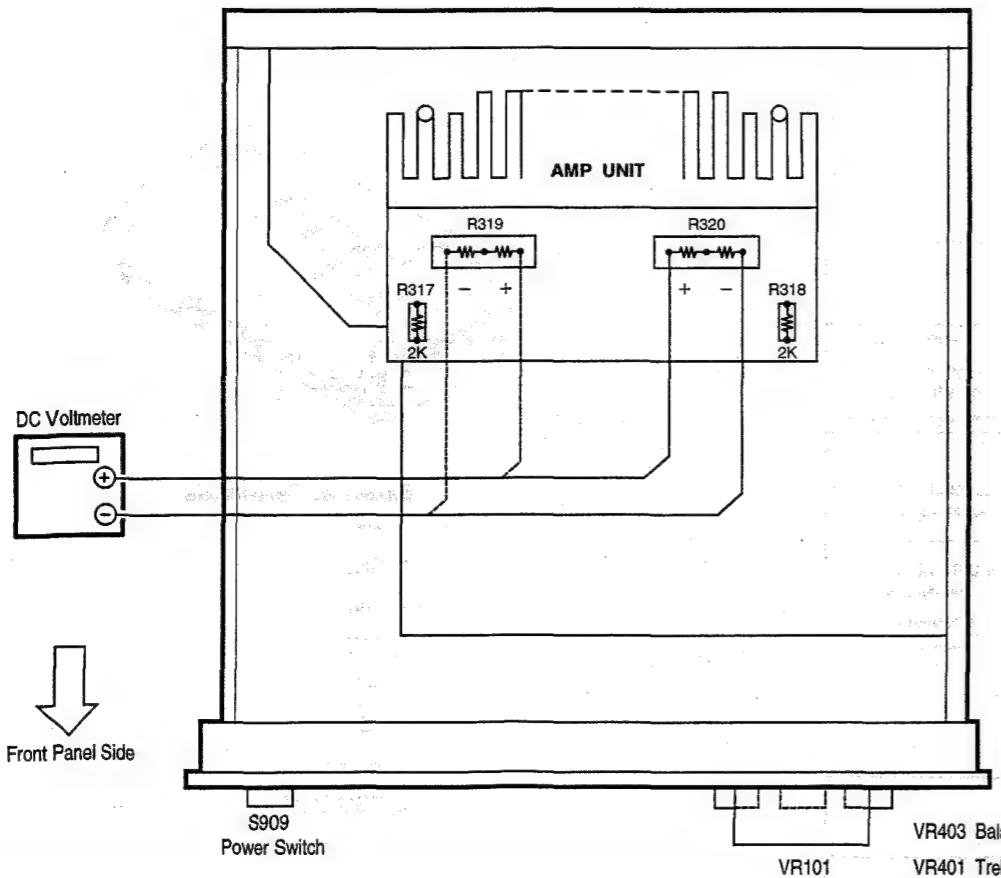
● DC Voltmeter

Arrangement

- (1) Avoid direct blow from an air conditioner or an electric fan, and adjust the unit at normal room temperature 15°C~30°C. (59°F~86°F).
- (2) Presetting
 - POWER (Power source switch) → ON
 - SPEAKER terminals → No load (Do not connect speaker, dummy resistor, etc.)
 - INPUT, Terminal → No input

Adjustment

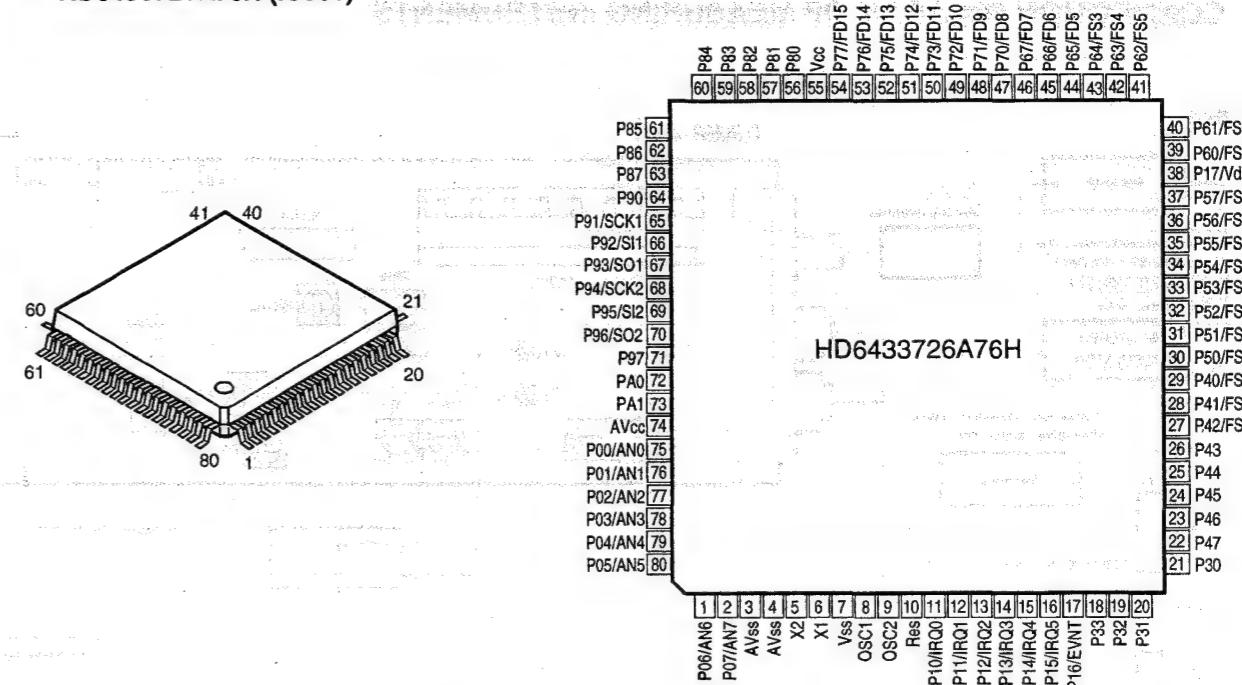
- (1) Remove the top cover and connect the DC Voltmeter to the test points (R319, R320).
- (2) Connect power cord to AC Line, and turn the Power Switch "ON".
- (3) After 10 minute, read the Test Points voltage whether it is from 2 mV to 40 mV DC.
- (4) When the value read from the voltmeter is 2 mV or less, cut R317 and R318 (2 kohm) on the AMP P.W.B. unit.



SEMICONDUCTORS

● IC's

HD6433726A76H (IC901)

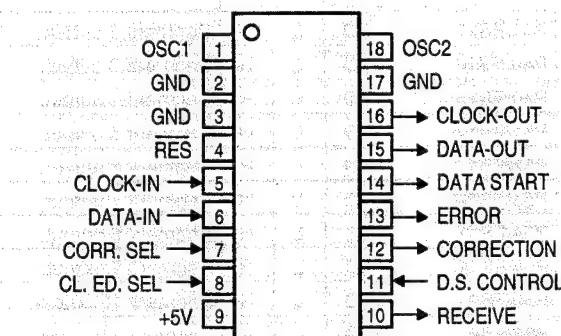
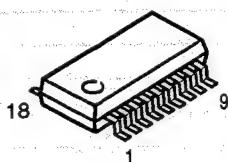


HD6433726A76H Terminal Function

| Pin No. | Symbol | Port Name | I/O | INI | ACT | Function |
|---------|------------|-----------|-----|-----|-----|-------------------------------------|
| 1 | AM Stereo | P60/AN6 | I | - | L | AM stereo signal detection. |
| 2 | Tuned In | P07/AN7 | I | L | H | - FM/AM tuning signal input. |
| 3 | GND | AVss | - | - | - | Analog ground. |
| 4 | GND | Test | - | - | - | |
| 5 | Sub Xtal | X2 | O | - | - | Sub Xtal drive. |
| 6 | Sub Xtal | X1 | I | - | - | Sub Xtal input. |
| 7 | Vss | Vss | - | - | - | Ground. |
| 8 | OSC1 | OSC1 | O | - | - | 8.38 MHz Xtal out. |
| 9 | OSC2 | OSC2 | I | - | - | 8.38 MHz Xtal in. |
| 10 | Reset | Res | I | - | L | Reset input. |
| 11 | Remocon | P10/IRQ0 | I | - | L | Remote control signal in. |
| 12 | 50/60 | P11/IRQ1 | I | - | L | 50/60 Hz AC input. |
| 13 | Protect | P12/IRQ2 | I | - | L | Overcurrent detection signal input. |
| 14 | RDS Start | P13/IRQ3 | I | - | L | RDS signal start detection. |
| 15 | RXD | P14/IRQ4 | I | - | L | Denon Bus data input. |
| 16 | Mute | P15/IRQ5 | O | H | L | Speaker relay off. |
| 17 | GND | P16/EVNT | I | - | - | Not used. |
| 18 | N.C. | P33 | O | L | L | No connection. |
| 19 | RT Gr LED | P32 | O | L | H | RT green LED. |
| 20 | TA Gr LED | P31 | O | L | H | TA green LED. |
| 21 | PTY Gr LED | P30 | O | L | H | PTY green LED. |
| 22 | RT Rd LED | P47 | O | L | H | RT red LED. |
| 23 | TA Rd LED | P46 | O | L | H | TA red LED. |
| 24 | RTY Rd LED | P45 | O | L | H | PTY red LED. |
| 25 | Diode 1 | P44 | I | - | H | Setting return input 1. |
| 26 | Diode 2 | P43 | I | - | H | Setting return input 2. |
| 27 | Seg 1 | P42/FS18 | O | L | H | Segment 1 output. |

| Pin No. | Symbol | Port Name | I/O | INI | ACT | Function |
|---------|--------------|-----------|-----|-----|-----|--|
| 28 | Seg 2 | P41/FS17 | O | L | H | Segment 2 output. |
| 29 | Seg 3 | P40/FS16 | O | L | H | Segment 3 output. |
| 30 | Seg 4 | P50/FS15 | O | L | H | Segment 4 output. |
| 31 | Seg 5 | P51/FS14 | O | L | H | Segment 5 output. |
| 32 | Seg 6 | P52/FS13 | O | L | H | Segment 6 output. |
| 33 | Seg 7 | P53/FS12 | O | L | H | Segment 7 output. |
| 34 | Seg 8 | P54/FS11 | O | L | H | Segment 8 output. |
| 35 | Seg 9 | P55/FS10 | O | L | H | Segment 9 output. |
| 36 | Seg 10 | P56/FS9 | O | L | H | Segment 10 output. |
| 37 | Seg 11 | P57/FS8 | O | L | H | Segment 11 output. |
| 38 | Vdisp | P17/Vdsp | - | - | - | High B voltage. |
| 39 | Seg 12 | P60/FS7 | O | L | H | Segment 12 output. |
| 40 | Seg 13 | P61/FS6 | O | L | H | Segment 13 output. |
| 41 | Seg 14 | P62/FS5 | O | L | H | Segment 14 output. |
| 42 | Seg 15 | P63/FS4 | O | L | H | Segment 15 output. |
| 43 | Seg 16 | P64/FS3 | O | L | H | Segment 16 output. |
| 44 | Dig 11 | P65/FD5 | O | L | H | Digit 11 output. |
| 45 | Dig 10 | P66/FD6 | O | L | H | Digit 10 output. |
| 46 | Dig 9 | P67/FD7 | O | L | H | Digit 9 output. |
| 47 | Dig 8 | P70/FD8 | O | L | H | Digit 8 output. |
| 48 | Dig 7 | P71/FD9 | O | L | H | Digit 7 output. |
| 49 | Dig 6 | P72/FD10 | O | L | H | Digit 6 output. |
| 50 | Dig 5 | P73/FD11 | O | L | H | Digit 5 output. |
| 51 | Dig 4 | P74/FD12 | O | L | H | Digit 4 output. |
| 52 | Dig 3 | P75/FD13 | O | L | H | Digit 3 output. |
| 53 | Dig 2 | P76/FD14 | O | L | H | Digit 2 output. |
| 54 | Dig 1 | P77/FD15 | O | L | H | Digit 1 output. |
| 55 | Vcc | Vcc | - | - | - | 5V. |
| 56 | Volume Dwn | P80 | O | H | H | Master volume down. |
| 57 | Volume Up | P81 | O | H | H | Master volume up. |
| 58 | Power | P82 | O | L | L | Amplifier circuit power on. |
| 59 | TU Mute | P83 | O | H | L | Tuner audio mute. |
| 60 | Auto/Mono | P84 | O | H | - | FM Auto/Mono setting. |
| 61 | Ant Sns | P85 | O | L | H | Antenna sensitivity reduction. |
| 62 | SDB | P86 | O | L | H | Super Dynamic Bass. |
| 63 | Sel EEROM | P87 | O | L | H | Select SCI to EEROM. |
| 64 | PLL CE | P90 | O | L | H | PLL serial data selection output. |
| 65 | Bus Clock | P91/SCK1 | O | H | - | Denon Bus clock. |
| 66 | Bus Data In | P92/SI1 | I | - | - | Denon Bus data input. |
| 67 | Bus Data Out | P93/SO1 | O | H | - | Denon Bus data output. |
| 68 | RDS Clock | P97/SCK2 | O | H | - | RDS data fetch clock input, PLL control clock output, LC7821 clock output. |
| 69 | RDS Data | P95/SI2 | I | H | - | RDS serial data input. |
| 70 | PLL Data | P96/SO2 | O | H | - | PLL serial data output, LC7821 serial data output. |
| 71 | RDS Res | P97 | O | H | L | LC7070 reset output. |
| 72 | PLL STRQ | PA0 | O | L | H | IF count operation request output. |
| 73 | LC7821CE | PA1 | O | L | H | LC7821 chip enable. |
| 74 | AVcc | AVcc | - | - | - | Analog 5 V power supply. |
| 75 | Key AD0 | P00/AN0 | I | - | - | Analog key input 0. |
| 76 | Key AD1 | P01/AN1 | I | - | - | Analog key input 1. |
| 77 | PWB Test | P02/AN2 | I | - | - | Board check at 5 V. |
| 78 | Stereo In | P03/AN3 | I | - | L | FM stereo demodulation detection. |
| 79 | Signal In | P04/AN4 | I | - | L | RF signal detection signal input. |
| 80 | Stop In | P05/AN5 | I | - | L | IF count tuning detection. |

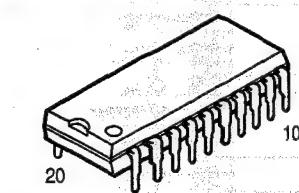
LC7074M (IC705)



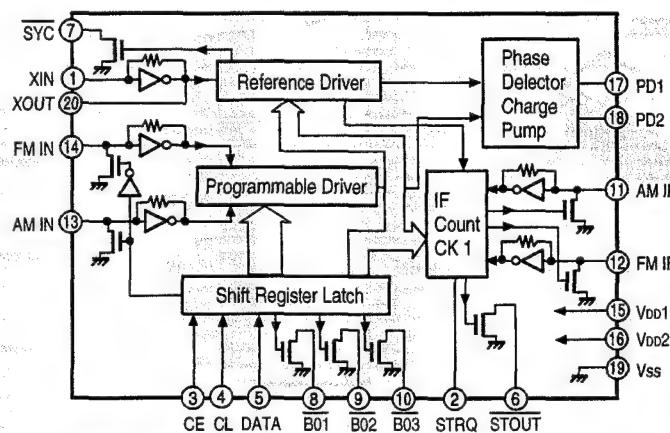
LC7074M Terminal Function

| Pin No. | Symbol | I/O | INI | Function |
|---------|-----------------|-----|-----|---|
| 1 | OSC1 | I | - | <ul style="list-style-type: none"> 4 MHz ceramic oscillator connection. |
| 2 | GND | - | - | <ul style="list-style-type: none"> Ground |
| 3 | GND | - | - | <ul style="list-style-type: none"> Ground |
| 4 | RES | I | - | <ul style="list-style-type: none"> System reset input. Reset and restart is accomplished by inputting the low level for 4 or more cycles. |
| 5 | CLOCK IN | I | H | <ul style="list-style-type: none"> RDS LA2230 series demodulation clock input. |
| 6 | DATA IN | I | H | <ul style="list-style-type: none"> RDS LA2230 serial demodulation data input. |
| 7 | CORR. SEL | I | H | <ul style="list-style-type: none"> Error correction on/off selection input. Sets the IC to correct errors in the RDS demodulation data or to output the data without correction. When input is 0 : No corrections are made When input is 1 : Corrections are executed |
| 8 | CL. ED. SEL | I | H | <ul style="list-style-type: none"> Serial data clock polarity selection input. When input is 0 : Serial data output is enabled at the rise of output clock. (Serial data output changes at the fall of the output clock.) When input is 1 : Serial data output is enabled at the fall of the output clock. (Serial data output changes at the rise of the output clock.) <p>Note: Set at the time of RES input.</p> |
| 9 | +5V | - | H | <ul style="list-style-type: none"> Power supply |
| 10 | RECEIVE (NC) | O | H | <ul style="list-style-type: none"> Output during RDS data reception. After the completion of sync detection, there is a low-level output while the serial data is being output. There is a high-level output at other times. Open drain output. |
| 11 | D.S. CONTROL | I | H | <ul style="list-style-type: none"> Block data start signal control input. When input is 0 : Data start signal is output for all blocks. When input is 1 : Data start signal is output for only the second block. |
| 12 | CORRECTION (NC) | O | H | <ul style="list-style-type: none"> Output without error correction. There is a low level output when the output data of the serial data output have been corrected when correction is not possible. There is a high-level output when correction have not been applied. Open drain output. |
| 13 | ERROR (NC) | O | H | <ul style="list-style-type: none"> Presence error output. There is a low-level output when the output data of the serial data output has an error and correction is not possible. There is a high-level output when there is no error or when the error has been corrected. Open drain output. |
| 14 | DATA START | O | H | <ul style="list-style-type: none"> Block data start signal of the serial data output. Output with pull-up resistor. |
| 15 | DATA OUT | O | H | <ul style="list-style-type: none"> Data output of the serial data output. Output with pull-up resistor. |
| 16 | CLOCK OUT | O | H | <ul style="list-style-type: none"> Clock output of the serial data output. Output with pull-up resistor. |
| 17 | GND | - | - | <ul style="list-style-type: none"> Ground |
| 18 | OSC2 | O | - | <ul style="list-style-type: none"> 4 MHz ceramic oscillator connection. |

LM7000 (IC703)



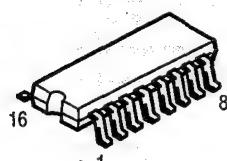
| | | | |
|-------|----|-------|----|
| XIN | 1 | XOUT | 20 |
| STRQ | 2 | Vss | 19 |
| CE | 3 | PD2 | 18 |
| CL | 4 | PD1 | 17 |
| DATA | 5 | Vdd2 | 16 |
| STOUT | 6 | Vdd1 | 15 |
| SYC | 7 | FM IN | 14 |
| BO1 | 8 | AM IN | 13 |
| BO2 | 9 | AM IF | 11 |
| BO3 | 10 | FM IF | 12 |



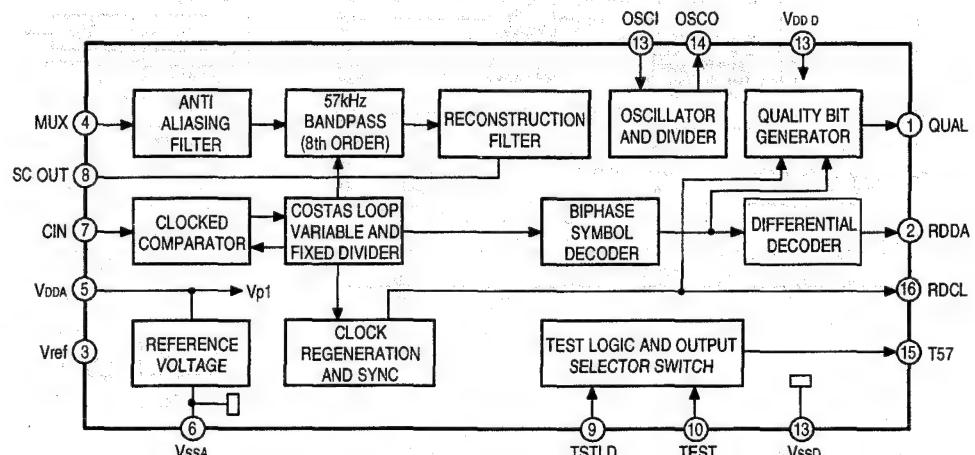
Pin Description

| | |
|-----------------|--|
| SYC | : Clock (400kHz) for the controller |
| XIN, XOUT | : X'tal oscillator (7.2MHz) with built-in feedback resistor |
| FM IN, AM IN | : Local oscillator signal input |
| CE, CL, DATA | : Data input |
| B01, B02, B03 | : Band data output, B01 can be set as the time base output (8Hz) |
| STRQ | : IF counter request input |
| STOUT | : Auto research stop signal output |
| Vdd1, Vdd2, Vss | : Power supply (Vdd2 is back-up power supply) |
| AMIF, FMIF | : IF signal input |
| PD1, PD2 | : Charge pump output |

SAA6579T (IC704)



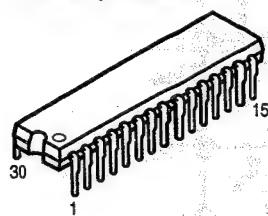
| | | | |
|-------|---|-------|----|
| QUAL | 1 | RDCL | 16 |
| RDDA | 2 | T57 | 15 |
| VREF | 3 | OSCO | 14 |
| MUX | 4 | OSCI | 13 |
| VDD A | 5 | VDD D | 12 |
| VSS A | 6 | VSS D | 11 |
| CIN | 7 | TEST | 10 |
| SCOUT | 8 | TSTLD | 9 |



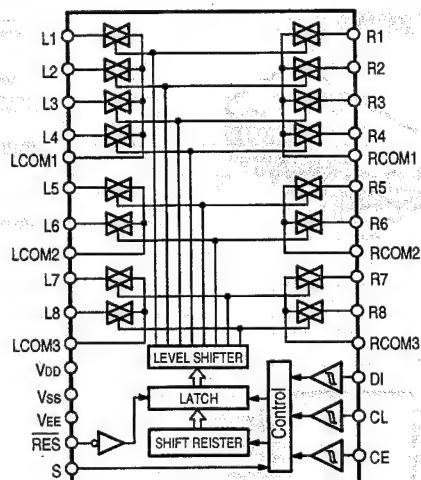
SAA6579T Terminal Function

| Pin No. | Symbol | Function |
|---------|--------|---|
| 1 | QUAL | Quality indication output. |
| 2 | RDDA | RDS data output. |
| 3 | Vref | Reference voltage output (0.5 VDD A). |
| 4 | MUX | Multiplex signal input. |
| 5 | VDD A | +5V power supply for analog part. |
| 6 | VSS A | Ground for analog part (0V). |
| 7 | CIN | Subcarrier input to comparator. |
| 8 | SCOUT | Subcarrier output of reconstruction filter. |
| 9 | TSTLD | Test control. |
| 10 | TEST | Test enable. |
| 11 | VSS D | Ground for digital part (0V). |
| 12 | VDD D | +5V power supply for digital part. |
| 13 | OSCI | Oscillator input. |
| 14 | OSCO | Oscillator output. |
| 15 | T57 | 57kHz clock signal output. |
| 16 | RDCL | RDS clock output. |

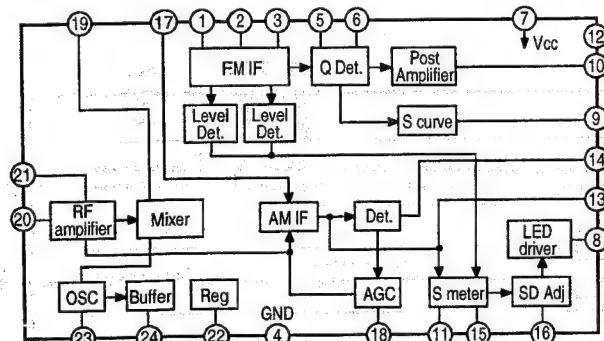
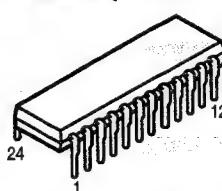
LC7821 (IC202)



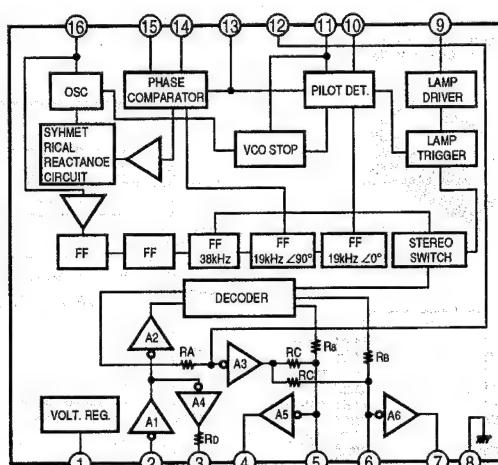
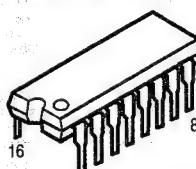
| | |
|-------|----|
| L1 | 1 |
| L2 | 2 |
| L3 | 3 |
| L4 | 4 |
| LCOM1 | 5 |
| L5 | 6 |
| L6 | 7 |
| LCOM2 | 8 |
| L7 | 9 |
| L8 | 10 |
| LCOM3 | 11 |
| VEE | 12 |
| CE | 13 |
| DI | 14 |
| CL | 15 |
| VDD | 19 |
| RES | 18 |
| S | 17 |
| Vss | 16 |



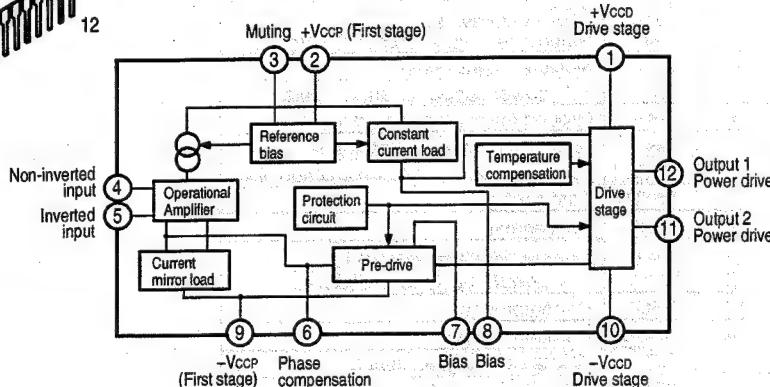
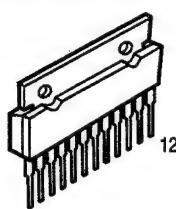
LA1267S (IC701)



LA3410 (IC702)

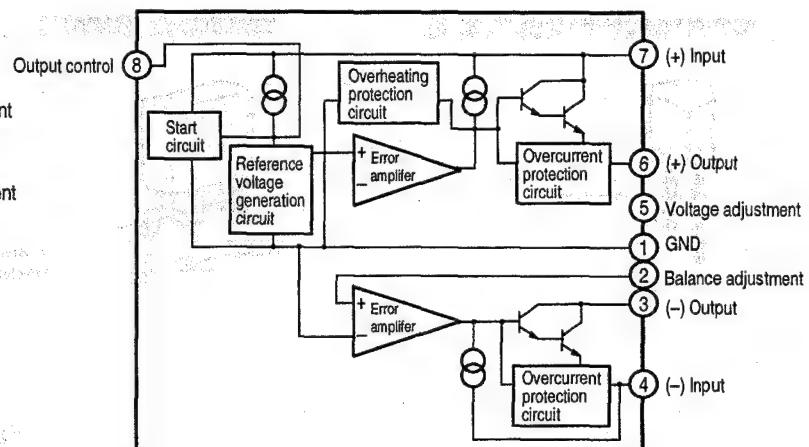
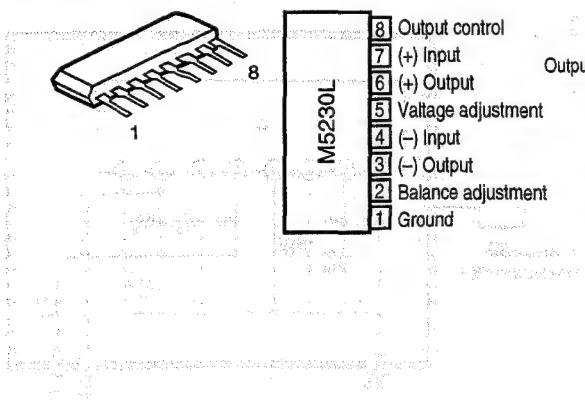
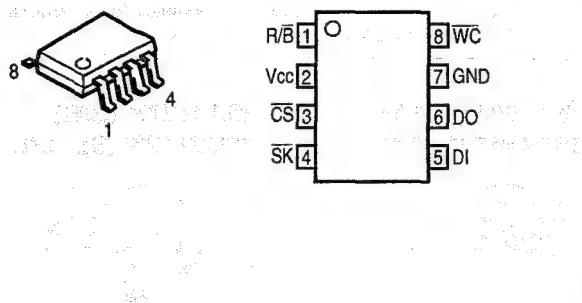


μPC1225H (IC301, 302)

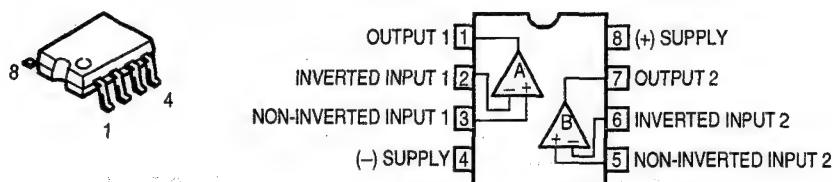
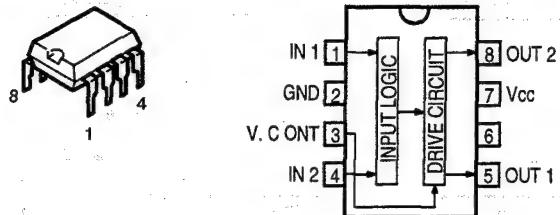
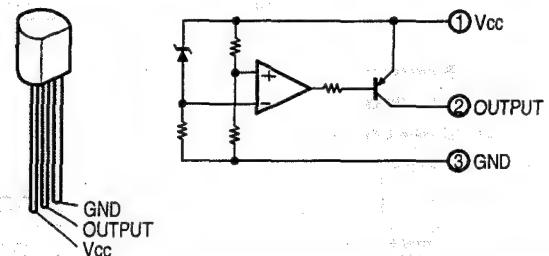


μPC1225H Terminal Function

| Pin No. | Function |
|---------|--------------------------------------|
| 1 | +VCCD (drive stage power supply) |
| 2 | +VCCP (pre-drive stage power supply) |
| 3 | MUTING |
| 4 | INPUT (non-inverting) |
| 5 | INPUT (inverting) |
| 6 | PHASE COMP |
| 7 | BIAS |
| 8 | BIAS |
| 9 | -VCCP (pre-drive stage power supply) |
| 10 | -VCCD (drive stage power supply) |
| 11 | LOWER OUTPUT |
| 12 | UPPER OUTPUT |

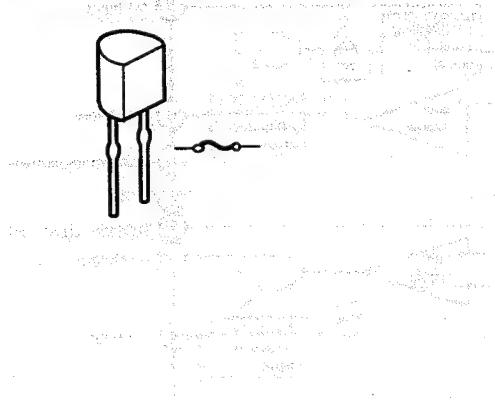
M5230L (IC4)**XL904F (IC902)****XL904F Terminal Function**

| Pin No. | Pin Name | I/O | Function |
|---------|----------|-----|--|
| 1 | R/B | O | READY, BUSY status signal output |
| 2 | Vcc | - | Connected to the power supply |
| 3 | CS | I | Chip select input |
| 4 | SK | I | Serial data clock input |
| 5 | DI | I | Operation code, address, and serial data input |
| 6 | DO | O | Serial data output |
| 7 | GND | - | Reference voltage of all inputs and outputs; 0 V |
| 8 | WC | I | Write control input |

NJM4565MD (IC101, 201, 203)**NJM2068MD (IC302, 303)****LB1639 (IC102)****PST529C (IC903)**

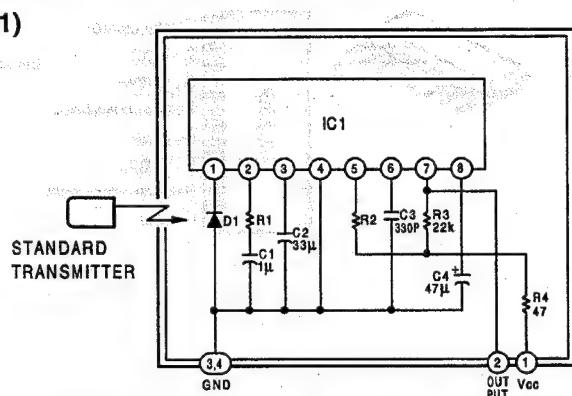
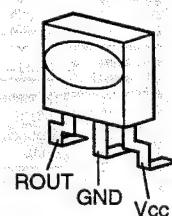
● IC PROTECTOR

ICP-N15/ICP-F15 (IC1, 2, 3)



● INFRARED REMOTE CONTROL SENSOR

SBX8035F (RM901)

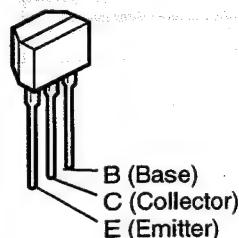


Equivalent Circuit and Measurement Circuit

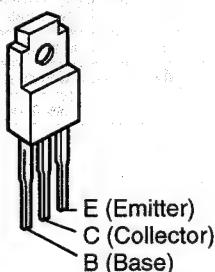
IC1 : CX20106A Chip
 D1 : PIN Photo Diode Chip
 C1,C2,C4 : Aluminum Electrolytic Capacitor
 C3 : SL Characteristic $\pm 5\%$
 R1 : Resistor for Gain Adjustment
 R2 : Use $\pm 1\%$ Resistor for fo Adjustment
 R (except for above) : $\pm 5\%$

● TRANSISTORS

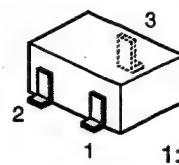
2SA933S (S) 2SC1740S (E)



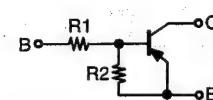
2SB1185 (E/F) 2SD1762 (E/F)



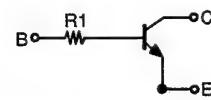
DTA114EK DTC343TK



1: Emitter
 2: Base
 3: Collector

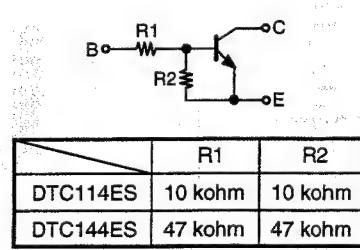


| | R1 | R2 |
|----------|---------|---------|
| DTA114EK | 10 kohm | 10 kohm |

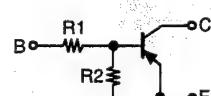


| | R1 |
|----------|----------|
| DTC343TK | 2.2 kohm |

DTA144ES DTC114ES DTC144ES



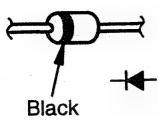
| | R1 | R2 |
|----------|---------|---------|
| DTC114ES | 10 kohm | 10 kohm |
| DTC144ES | 47 kohm | 47 kohm |



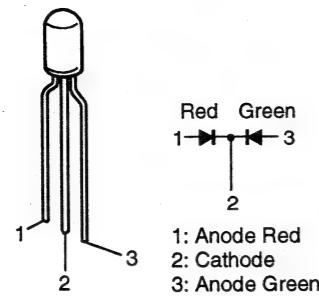
| | R1 | R2 |
|----------|---------|---------|
| DTA144ES | 47 kohm | 47 kohm |

● DIODES

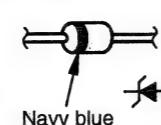
ISS131
IN4002



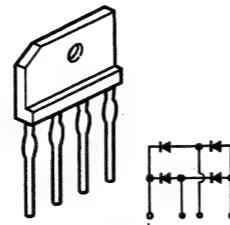
SPR-39MVW3
(LED901, 902, 903)



MTZJ5.6B
MTZJ6.2B
MTZJ13B
MTZJ27B

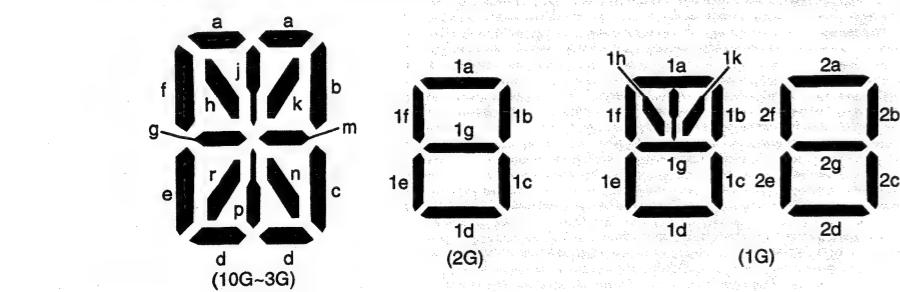
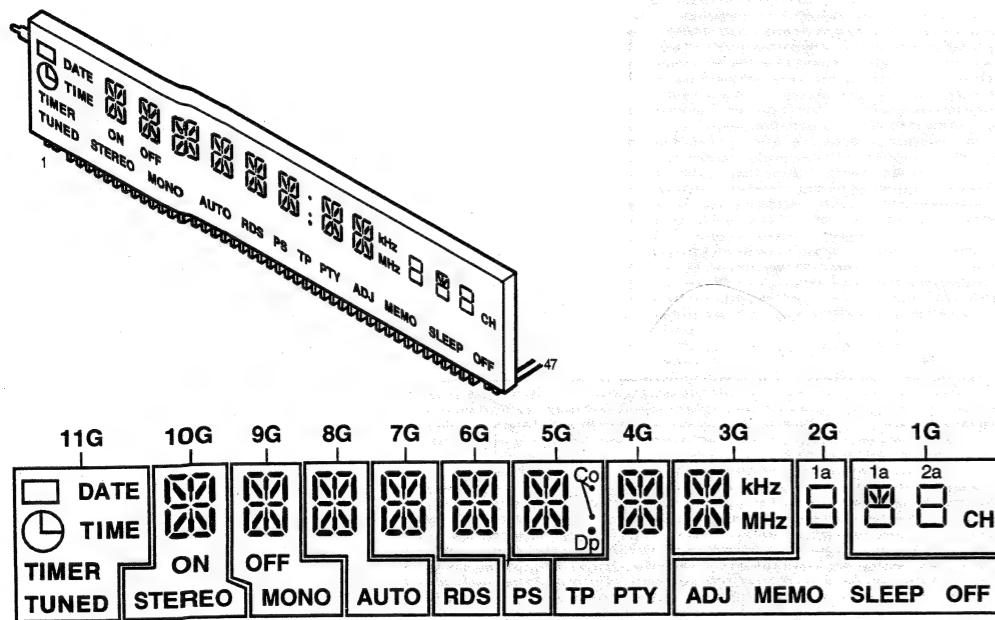


DBF40C/D3SB20



● FL DISPLAY

11BT127GK (FL901)



Pin Connections

| Pin No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
|------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|-----|----|----|----|----|----|----|----|----|----|
| Connection | F1 | F1 | NP | NP | 1G | 2G | 3G | 4G | 5G | 6G | 7G | 8G | 9G | 10G | 11G | NC |
| Pin No. | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | |
| Connection | NC | NC | NC | P16 | P15 | P14 | P13 | P12 | P11 | P10 | P9 | P8 | P7 | P6 | P5 | P4 | P3 | P2 | P1 | NP | NP | F2 | F2 | |

NOTE: 1) F1 and F2: Filaments
2) NP: No pin
3) NC: No connection
4) 1G through 11G: Grid

ANODE CONNECTION

| | 11G | 10G | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|-----|-------|--------|------|------|-----|----|----|-----|-----|-------|--------|
| P1 | | a | a | a | a | a | a | a | a | 1a | 1a |
| P2 | DATE | b | b | b | b | b | b | b | b | 1b | 1b |
| P3 | TIME | c | c | c | c | c | c | c | c | 1c | 1c |
| P4 | TIMER | d | d | d | d | d | d | d | d | 1d | 1d |
| P5 | TUNED | f | f | f | f | f | f | f | f | 1f | 1f |
| P7 | — | g | g | g | g | g | g | g | g | 1g | 1g |
| P8 | — | h | h | h | h | h | h | h | h | ADJ | 1h, 1k |
| P9 | — | j | j | j | j | j | j | j | j | MEMO | 2a |
| P10 | — | k | k | k | k | k | k | k | k | SLEEP | 2b |
| P11 | — | m | m | m | m | m | m | m | m | OFF | 2c |
| P12 | — | n | n | n | n | n | n | n | n | — | 2d |
| P13 | — | p | p | p | p | p | p | p | p | — | 2e |
| P14 | — | r | r | r | r | r | r | r | r | — | 2f |
| P15 | — | ON | OFF | AUTO | RDS | PS | Co | TP | KHz | — | 2g |
| P16 | — | STEREO | MONO | — | — | — | Dp | PTY | MHz | — | CH |

PRINTED WIRING BOARD

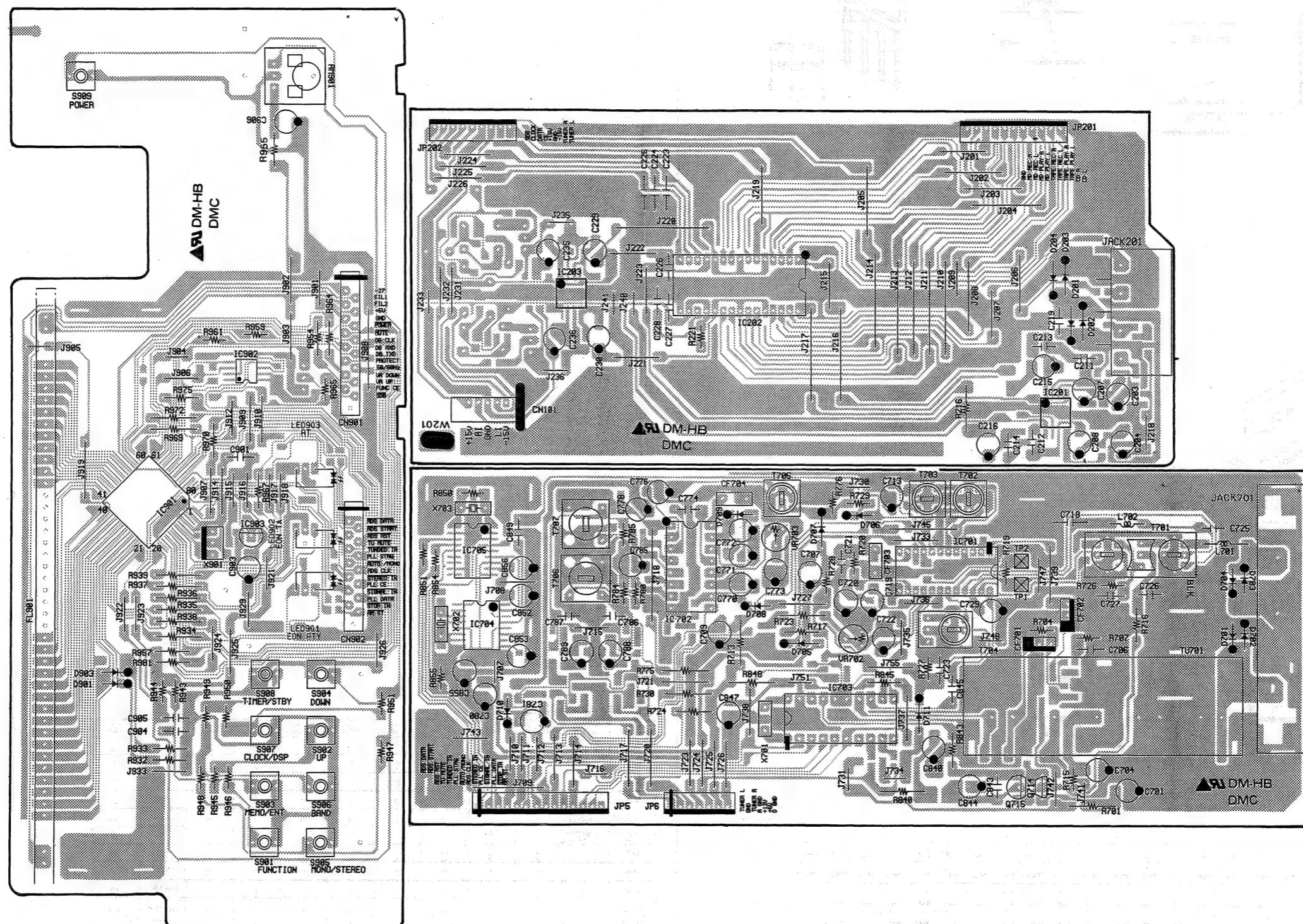
1

2

3

4

Front/Toner/Function P.W.B Unit (Component side)



1

2

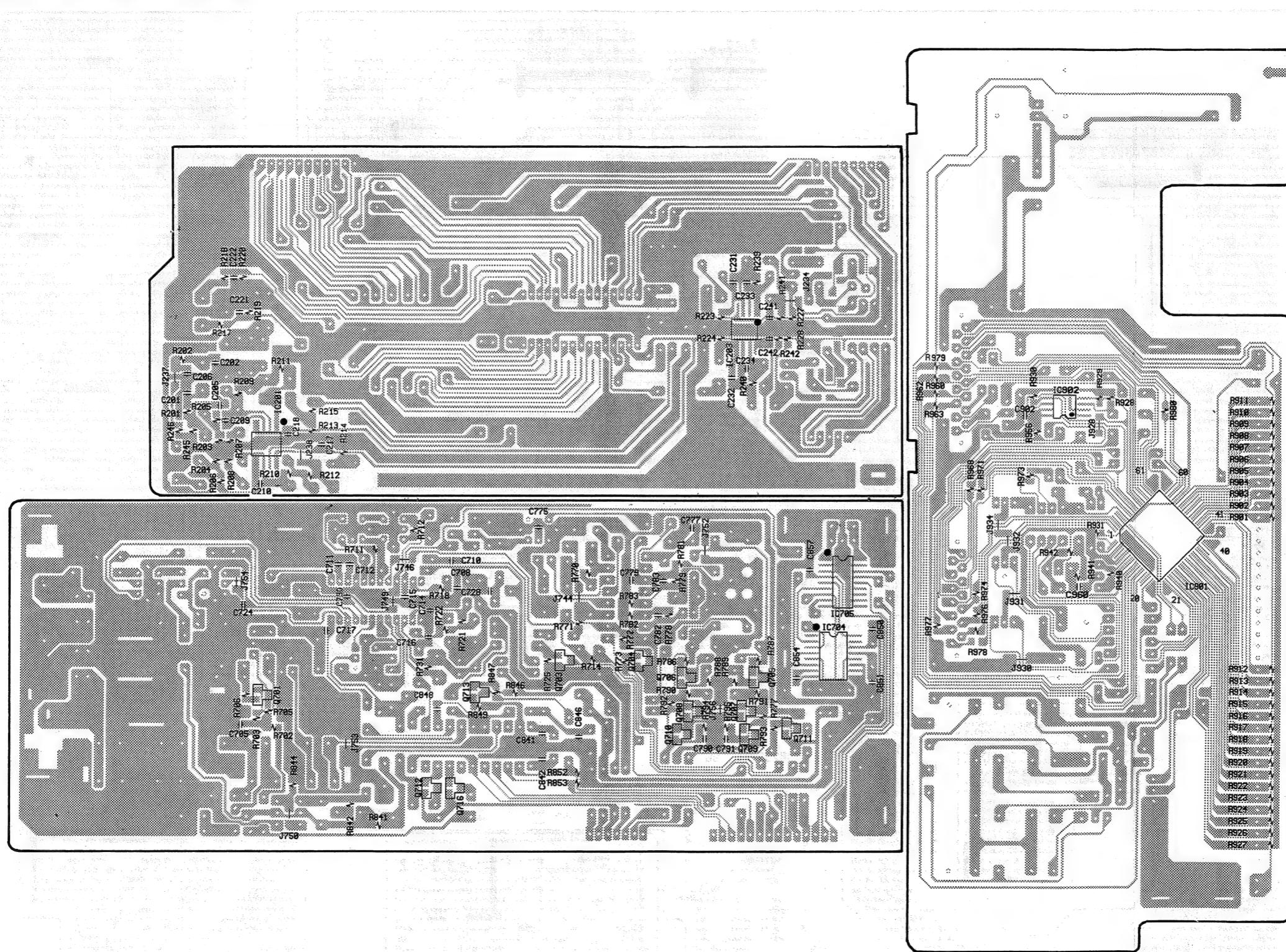
1

1

7

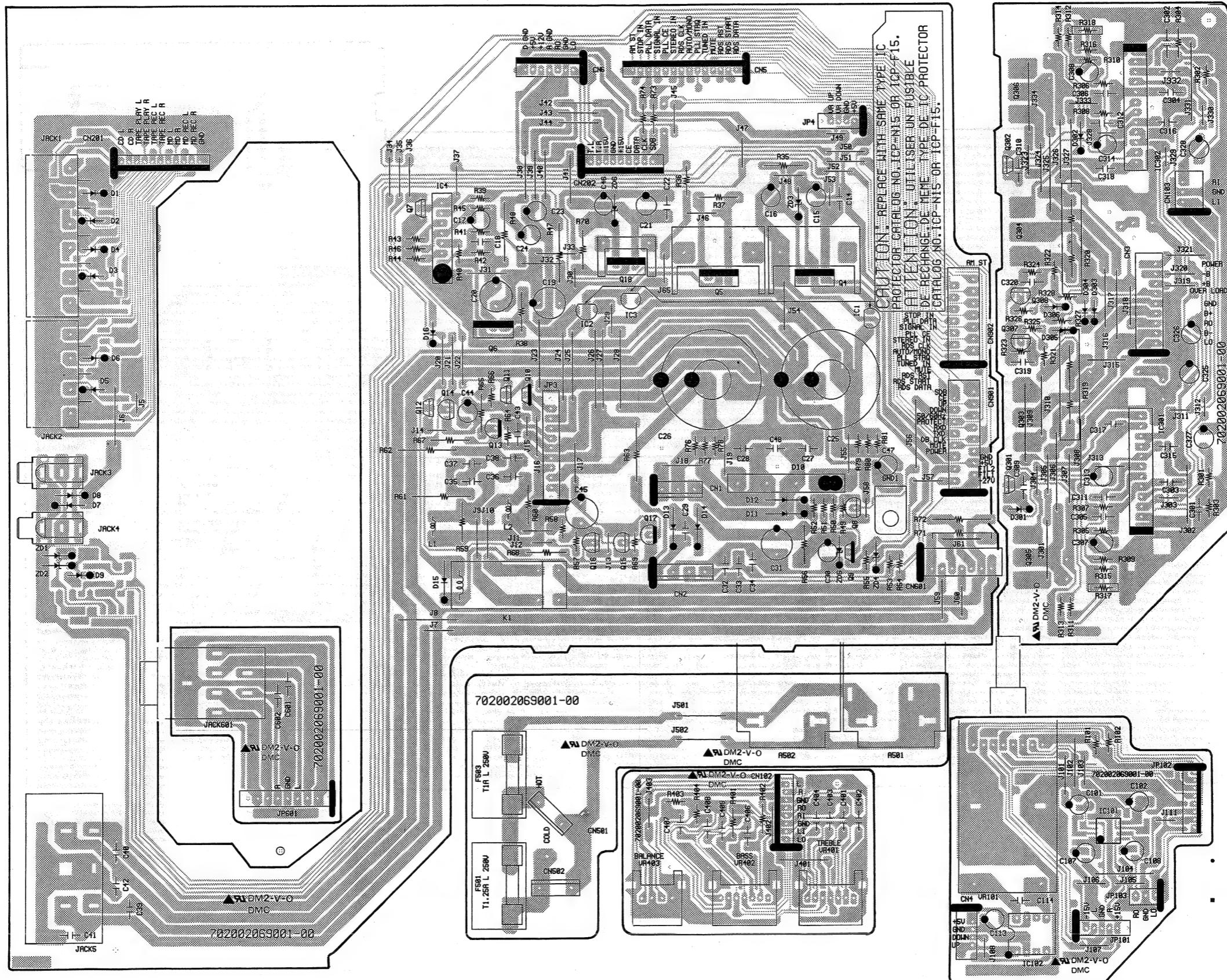
8

Front/Toner/Function P.W.B Unit (Pattern side)



1 2 3 4 5 6 7 8

Main P.W.B Unit (Component side)



1

2

3

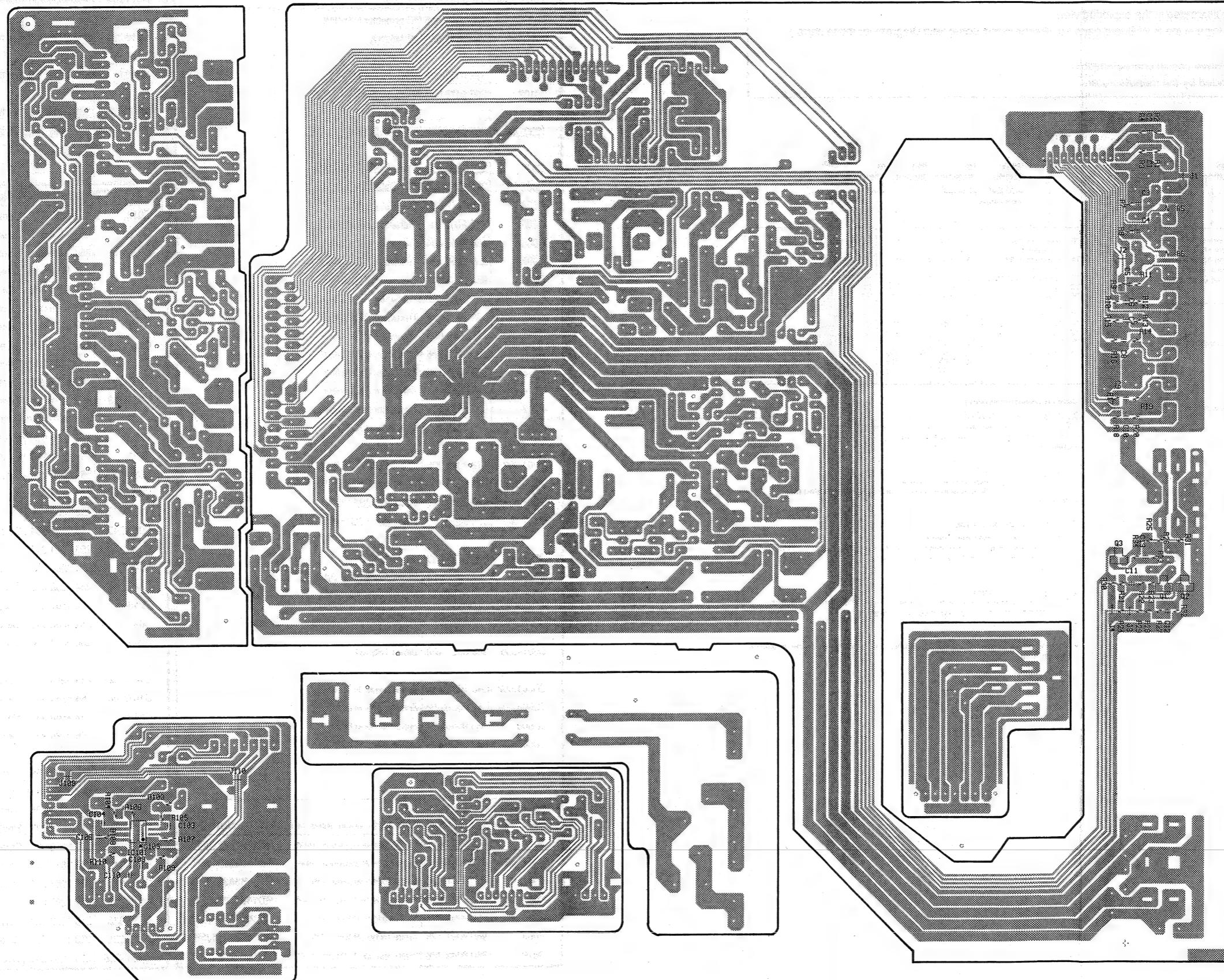
4

5

6

7

8

Main P.W.B Unit (Pattern side)

NOTE FOR PARTS LIST

- Part indicated with the mark "◎" are not always in stock and possibly to take a long period of time for supplying, or in some case supplying of part may be refused.
- When ordering of part, clearly indicate "1" and "I" (i) to avoid mis-supplying.
- Ordering part without stating its part number can not be supplied.
- Part indicated with the mark "★" is not illustrated in the exploded view.
- Not including Carbon Film ±5%, 1/4W Type in the P.W. Board parts list. (Refer to the Schematic Diagram for those parts.)

WARNING:

Parts marked with this symbol  have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

● Resistors

| Ex.: RN | 14K | 2E | 182 | G | FR |
|-----------------------|-----------------------|-------|-------------|--------------------------|--------|
| Type | Shape and performance | Power | Resist-ance | Allowable error | Others |
| RD : Carbon | 2B : 1/8W | F | ±1% | P : Pulse-resistant type | |
| RC : Composition | 2E : 1/4W | G | ±2% | NL : Low noise type | |
| RS : Metal oxide film | 2H : 1/2W | J | ±5% | NB : Non-burning type | |
| RW : Winding | 3A : 1W | K | ±10% | FR : Fuse-resistor | |
| RN : Metal film | 3D : 2W | M | ±20% | F : Lead wire forming | |
| RK : Metal mixture | 3F : 3W | | | | |
| | 3H : 5W | | | | |

* Resistance
1 8 2 → 1800 ohm = 1.8 kohm
Indicates number of zeros after effective number.
2-digit effective number.

• Units: ohm

1 R 2 → 1.2 ohm
1-digit effective number.
2-digit effective number, decimal point indicated by R.

• Units: ohm

● Capacitors

| Ex.: CE | 04W | 1H | 2R2 | M | BP |
|----------------------------------|-----------------------|---------------------|----------------------------------|-----------------|--------|
| Type | Shape and performance | Dielectric strength | Capacity | Allowable error | Others |
| CE : Aluminum foil electrolytic | 0J : 6.3V | F : ±1% | HS : High stability type | | |
| CA : Aluminum solid electrolytic | 1A : 10V | G : ±2% | BP : Non-polar type | | |
| CS : Tantalum electrolytic | 1C : 16V | J : ±5% | HR : Ripple-resistant type | | |
| CC : Film | 1E : 25V | K : ±10% | DL : For change and discharge | | |
| CK : Ceramic | 1V : 35V | M : ±20% | HF : For assuring high frequency | | |
| CC : Ceramic | 1H : 50V | Z : +80% | U : UL part | | |
| CP : Oil | 2A : 100V | Y : -20% | C : CSA part | | |
| CM : Mica | 2B : 125V | P : +100% | W : UL-CSA type | | |
| CF : Metallized | 2C : 160V | Y : -0% | F : Lead wire forming | | |
| CH : Metallized | 2D : 200V | C : ±0.25pF | | | |
| | 2E : 250V | D : ±0.5pF | | | |
| | 2H : 500V | = : Others | | | |
| | 2J : 630V | | | | |

* Capacity (electrolyte only)
2 2 2 → 2200μF
Indicates number of zeros after effective number.
2-digit effective number.

• Units: μF

2 R 2 → 2.2μF
1-digit effective number.
2-digit effective number, decimal point indicated by R.

• Units: μF

2 2 2 → 220pF=0.0022μF
(More than 2) → Indicates number of zeros after effective number.
2-digit effective number.

• Units: pF

2 2 1 → 220pF
(0 or 1) → Indicates number of zeros after effective number.
2-digit effective number.

• Units: pF

• When the dielectric strength is indicated in AC, "AC" is included after the dielectric strength value.

PARTS LIST OF P.W.B. UNIT ASS'Y

MAIN UNIT

| Ref. No. | Part No. | Part Name | Remarks |
|--|--------------|----------------------------|---------------|
| SEMICONDUCTORS GROUP | | | |
| IC001-003 | 268 0073 905 | IC protector ICP-N15 | |
| IC004 | 263 0646 007 | IC M5230L | |
| IC101 | 928 0035 809 | IC NJM4565MD | |
| IC102 | 263 0476 002 | IC LB1639 | |
| IC301,302 | 363 0206 007 | IC μPC1225H | |
| Q001 | 271 0238 908 | Transistor 2SA1037K | |
| Q002,003 | 273 0384 900 | Transistor 2SC2412K | |
| Q004 | 960 0049 404 | Transistor 2SD2576F | |
| Q005 | 9LC F013 21 | Transistor 2SB1655E | |
| Q006 | 960 0049 404 | Transistor 2SD2576F | |
| Q007 | 269 0040 009 | Transistor DTC144ES | |
| Q008 | 960 0005 202 | Transistor KTC3198Y | |
| Q009 | 271 0192 002 | Transistor 2SA933S | |
| Q010 | 269 0093 904 | Transistor DTA144ES | |
| Q011 | 269 0040 009 | Transistor DTC144ES | |
| Q012 | 269 0020 906 | Transistor DTC114ES | |
| Q013 | 960 0005 105 | Transistor KTA1266Y | |
| Q014-016 | 960 0005 202 | Transistor KTC3198Y | |
| Q017 | 960 0005 105 | Transistor KTA1266Y | |
| Q018 | 960 0049 404 | Transistor 2SD2576F | |
| Q301,302 | 273 0388 906 | Transistor 2SC1740SE | |
| Q303,304 | 960 0000 304 | Transistor 2SC4467P | |
| Q305,306 | 960 0000 207 | Transistor 2SA1694P | |
| Q307,308 | 273 0207 003 | Transistor KSC1845F | |
| D001-009 | 960 0031 409 | Diode 1SS131 | |
| D010 | 960 0039 508 | Diode D3SB20 or DBF40C | |
| D011-015 | 916 0053 008 | Diode 1N4002A | |
| D016 | 960 0031 409 | Diode 1SS131 | |
| D301-306 | 960 0031 409 | Diode 1SS131 | |
| ZD001,002 | LA2 100U 125 | Zener diode MTZJ6.2B | |
| ZD003,004 | LA2 60C0 058 | Zener diode MTZJ5.6B | |
| ZD005 | 9H3 0000 231 | Zener diode MTZJ27B | |
| ZD006 | 960 0037 209 | Zener diode MTZJ13B | |
| CAPACITORS GROUP (Not included ceramic chip type capacitor) | | | |
| C014 | 253 1174 018 | Ceramic 0.01 μF/16V | CK14Y1C103M |
| C015 | 254 4254 912 | Electrolytic 22 μF/16V | CE04W1C220M |
| C016 | 254 4260 061 | Electrolytic 3.3 μF/50V | CE04W1H3R3M |
| C017 | 254 4260 045 | Electrolytic 1 μF/50V | CE04W1H010M |
| C018 | 255 1251 940 | Film 0.0047 μF/50V | CQ92M1H472J |
| C019,020 | 254 4256 046 | Electrolytic 100 μF/25V | CE04W1E101M |
| C021 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C022 | 253 1174 018 | Ceramic 0.01 μF/16V | CK14Y1C103M |
| C023,024 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C025,026 | 960 9002 219 | Electrolytic 4700 μF/50V | |
| C027,028 | 960 9001 100 | Ceramic 0.01 μF/500V | CK45F2H103Z |
| C029 | 253 1010 004 | Ceramic 0.01 μF/50V | CK45B1H103K |
| C030 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C031 | 254 4261 028 | Electrolytic 100 μF/50V | CE04W1H101M |
| C032-034 | 253 1010 004 | Ceramic 0.01 μF/50V | CK45B1H103K |
| C035-038 | 255 4224 903 | Film 0.047 μF/50V | CQ92M1H473J |
| C039,040 | 255 1251 940 | Film 0.0047 μF/50V | CQ92M1H472J |
| C041,042 | 253 1179 084 | Ceramic 0.0047 μF/50V | CK45B1H472K |
| C043 | 253 1174 018 | Ceramic 0.01 μF/16V | CK14Y1C103M |
| C044 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C045 | 254 4250 042 | Electrolytic 330 μF/6.3V | CE04W0J331M |
| C046 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C047 | 254 4260 045 | Electrolytic 1 μF/50V | CE04W1H010M |
| C048 | 960 9001 100 | Ceramic 0.01 μF/500V | CK45F2H103Z |
| C101,102 | 254 4260 045 | Electrolytic 1 μF/50V | CE04W1H010M |
| C107,108 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C113 | 254 4260 087 | Electrolytic 10 μF/50V | CE04W1H100M |
| C114 | 255 4199 973 | Film 0.01 μF/50V | CQ92M1H103J |
| C301,302 | 253 1193 976 | Ceramic 220pF/50V | CK14B1H221K |
| C303,304 | 960 9000 159 | Ceramic 100pF/50V | CK14B1H101K |
| C305,306 | 960 9002 235 | Ceramic 4.7pF/50V | CK14CH1H4R7K |
| C307,308 | 254 4252 037 | Electrolytic 100 μF/10V | CE04W1A101M |
| C309,310 | 253 1195 929 | Ceramic 0.0022 μF/16V | CK14X1C222M |
| C311,312 | 253 3617 007 | Ceramic 39pF/50V | CC45SL1H390J |
| C313,314 | 254 4261 015 | Electrolytic 47 μF/50V | CE04W1H470M |
| C315,316 | 254 4297 002 | Ceramic 150pF/500V | CC45SL2H151J |
| C317,318 | 255 4223 988 | Film 0.033 μF/50V | CQ92M1H333J |
| C319,320 | 253 1175 907 | Ceramic 0.022 μF/25V | CK14F1E223Z |
| C325-328 | 254 4260 045 | Electrolytic 1 μF/50V | CE04W1H010M |
| RESISTORS GROUP (Not included carbon film ±5% 1/4W and chip type resistor) | | | |
| R035 | 960 9001 634 | Fuse resistor 4.7kohm 1/4W | RD14B2E472JFR |
| R037,038 | 960 9001 621 | Fuse resistor 220ohm 1/4W | RD14B2E221JFR |
| R047,048 | 960 9001 728 | Metal oxide 390ohm 1W | RS14B |

FRONT UNIT

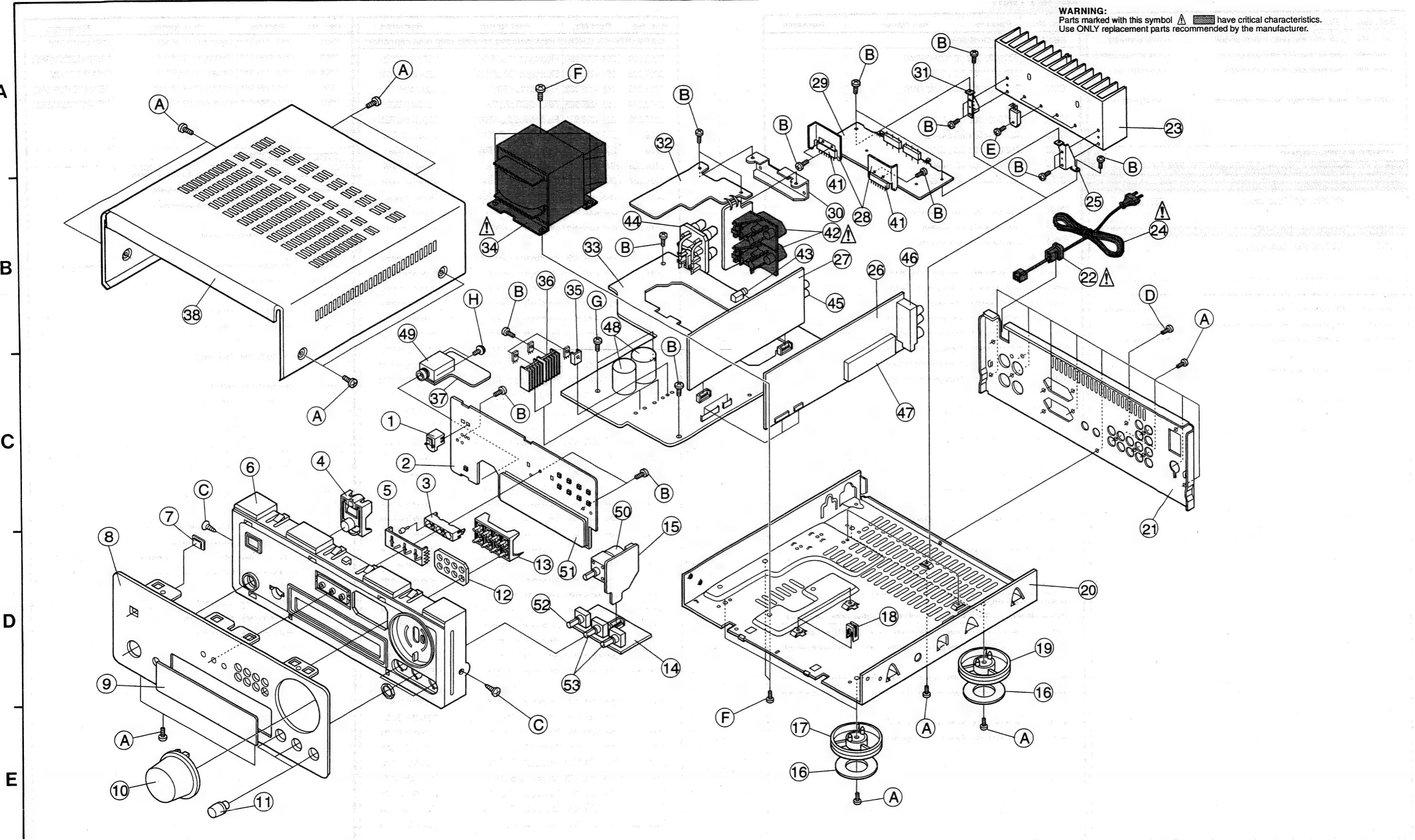
| Ref. No. | Part No. | Part Name | Remarks |
|---|--------------|---------------------------|---------------------|
| C401,402 | 255 1251 982 | Film 0.0056 μ F/50V | CQ92M1H562J |
| C403~406 | 255 4212 067 | Film 0.033 μ F/50V | CQ92M1H333K(MRZ) |
| C407,408 | 960 9002 222 | Film 0.18 μ F/50V | CQ92M1H184J |
| C601,602 | HMA 1000 160 | Ceramic 220pF/50V | CK14B1H221K |
| OTHER PARTS GROUP | | | |
| △F501 | 960 0037 005 | Fuse 250V/T1.25A | |
| △F503 | 960 0049 608 | Fuse 250V/T1A | |
| | 960 0005 804 | Fuse holder | (F501,503) |
| △A501,502 | 960 0049 501 | AC outlet | |
| GND1 | 960 0036 909 | Earth terminal | |
| JACK1 | 960 0005 406 | 6P RCA terminal | CD/TAPE |
| JACK2 | 960 0004 504 | 4P RCA terminal | MD |
| JACK3,4 | 960 0004 407 | Jack D3.5 | System connector |
| JACK5 | 960 0004 601 | 4P speaker terminal | Speaker |
| JACK601 | 960 0002 904 | Jack D6.5 | Headphone |
| K001 | 214 0128 002 | Relay | |
| L001,002 | 960 0005 008 | Coil 0.15 μ H | |
| B | DDC 2150 903 | 3x8 special screw | Heat sink Power PWB |
| RESISTORS GROUP (Not included carbon film $\pm 5\%$ 1/4W and chip type resistor) | | | |
| R701 | 241 2313 066 | Fuse resistor 47ohm 1/4W | RD14B2E470JFR |
| R775 | 241 2313 901 | Fuse resistor 100ohm 1/4W | RD14B2E101JFR |
| R840 | 241 2313 901 | Fuse resistor 100ohm 1/4W | RD14B2E101JFR |
| R848 | 241 2315 912 | Fuse resistor 10ohm 1/4W | RD14B2E100JFR |
| VR702 | 960 0043 303 | Semi fixed 47kohm-B | |
| VR703 | 960 0043 206 | Semi fixed 220kohm-B | |

| Ref. No. | Part No. | Part Name | Remarks |
|-------------------|--------------|-------------------------------|------------------|
| C203,204 | 254 4260 980 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C207,208 | 254 4252 037 | Electrolytic 100 μ F/10V | CE04W1A101M |
| C211,212 | 255 4223 933 | Film 0.012 μ F/50V | CQ92M1H123J |
| C213,214 | 255 4222 963 | Film 0.0033 μ F/50V | CQ92M1H332J |
| C215,216 | 254 4260 951 | Electrolytic 2.2 μ F/50V | CE04W1H2R2M |
| C219 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C223 | 253 1194 959 | Ceramic 0.001 μ F/50V | CK14B1H102K |
| C224,225 | HMA 1000 159 | Ceramic 100pF/50V | CK14B1H101K |
| C226,227 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C228 | 253 1175 907 | Ceramic 0.022 μ F/25V | CK14F1E223Z |
| C229,230 | 254 4260 045 | Electrolytic 1 μ F/50V | CE04W1H010M |
| C235,236 | 254 4260 045 | Electrolytic 1 μ F/50V | CE04W1H010M |
| C701 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| C704 | 254 4260 045 | Electrolytic 1 μ F/50V | CE04W1H010M |
| C706 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C707 | 254 4260 087 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C709 | 254 4260 045 | Electrolytic 1 μ F/50V | CE04W1H010M |
| C713 | 254 4260 061 | Electrolytic 3.3 μ F/50V | CE04W1H3R3M |
| C718 | HMA 1000 156 | Ceramic 22pF/50V | CC14SL1H220J |
| C719 | 254 4260 074 | Electrolytic 4.7 μ F/50V | CE04W1H4R7M |
| C720 | 254 4260 061 | Electrolytic 3.3 μ F/50V | CE04W1H3R3M |
| C721 | 255 4223 945 | Film 0.015 μ F/50V | CQ92M1H153J |
| C722 | 254 4260 087 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C723 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C725 | 253 4535 968 | Ceramic 6pF/50V | CC45SL1H060D |
| C726 | 253 1026 001 | Ceramic 0.047 μ F/50V | CK45F1H473Z |
| C727 | 253 1190 940 | Ceramic 15pF/50V | CK14SL1H150J |
| C729 | 254 4260 087 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C770 | 254 4260 045 | Electrolytic 1 μ F/50V | CE04W1H010M |
| C771 | 254 4260 061 | Electrolytic 3.3 μ F/50V | CE04W1H3R3M |
| C772 | 254 3056 001 | Electrolytic 0.47 μ F/50V | CE04W1HR47M |
| C773 | 254 4260 087 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C774 | 255 4212 054 | Film 0.047 μ F/50V | CQ92M1H473J |
| C776 | 254 4260 087 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C778 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| C780 | 254 4250 929 | Electrolytic 100 μ F/16V | CE04W1C101M |
| C781 | 254 4260 087 | Electrolytic 10 μ F/50V | CE04W1H100M |
| C785 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| C786,787 | 255 4212 012 | Film 0.0047 μ F/50V | CQ92M1H472J |
| C788,789 | 254 4260 951 | Electrolytic 2.2 μ F/50V | CE04W1H2R2M |
| C840 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| C843 | 255 4223 975 | Film 0.027 μ F/50V | CQ92M1H273J |
| C844 | 254 4260 045 | Electrolytic 1 μ F/50V | CE04W1H010M |
| C845 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C847 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| C849 | HMA 1000 159 | Ceramic 100pF/50V | CK14B1H101K |
| C852 | 254 4260 951 | Electrolytic 2.2 μ F/50V | CE04W1H2R2M |
| C853 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| C855,856 | 254 4254 938 | Electrolytic 47 μ F/16V | CE04W1C470M |
| OTHER PARTS GROUP | | | |
| C901 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C903 | 254 4299 919 | Electrolytic 22 μ F/16V | CE04W1C220M(SRE) |
| C904,905 | 253 1174 018 | Ceramic 0.01 μ F/16V | CK14Y1C103M |
| C906 | 254 4299 964 | Electrolytic 47 μ F/16V | CE04W1C470M(SRE) |
| C907 | 254 4299 919 | Electrolytic 22 μ F/16V | CE04W1C220M(SRE) |
| CF701,702 | 261 0120 006 | FM filter SFE10.7MS3GK-A | |
| CF703 | 940 0425 202 | AM filter BFU450C4N | |
| CF704 | 261 0079 005 | Resonator CSB456F11 | |
| FL901 | 393 8012 002 | FL display | |
| JACK201 | 960 0004 504 | 4P RCA terminal | PHONO/AUX |
| LACK701 | 960 0008 209 | ANT terminal | |
| L701 | 960 0007 307 | Filter coil 1 μ H | |
| L702 | 960 0051 007 | Filter coil 10 μ H | |
| S901~909 | LA2 60C0 008 | Tact switch | |
| T701 | 960 0007 336 | MW IF coil | |
| T702 | 960 0007 349 | FM IF coil | |
| T703 | 960 0007 352 | FM IF coil | |
| T704 | 960 0007 323 | MW IF coil | |
| T705 | 960 0037 607 | LC filter | |
| T706,707 | 960 0050 600 | LC MPX filter | |
| TU701 | 960 0050 707 | FM tuner FE418-G02 | |
| X701 | 960 0008 005 | Crystal 7.2MHz | |
| X702 | 399 0178 007 | Crystal 4.332MHz | |
| X703 | 399 9018 003 | Resonator CST4.00MGW | |
| X901 | 399 0243 903 | Resonator CST8.38MTW | |
| | 960 0050 406 | LED holder | |
| | 960 0050 309 | FLD supporter | |
| | 960 0050 804 | Earth plate | |

EXPLODED VIEW

1 2 3 4 5 6 7 8

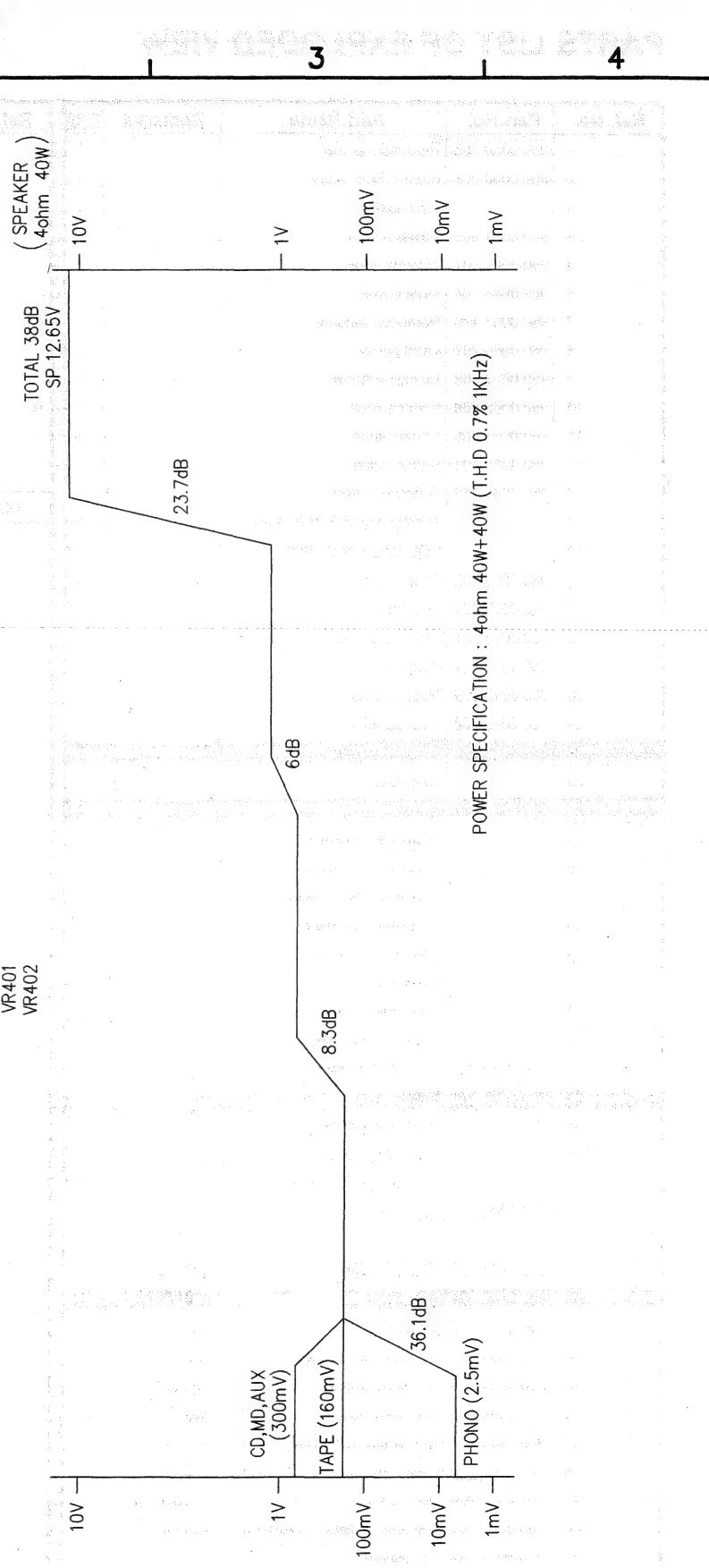
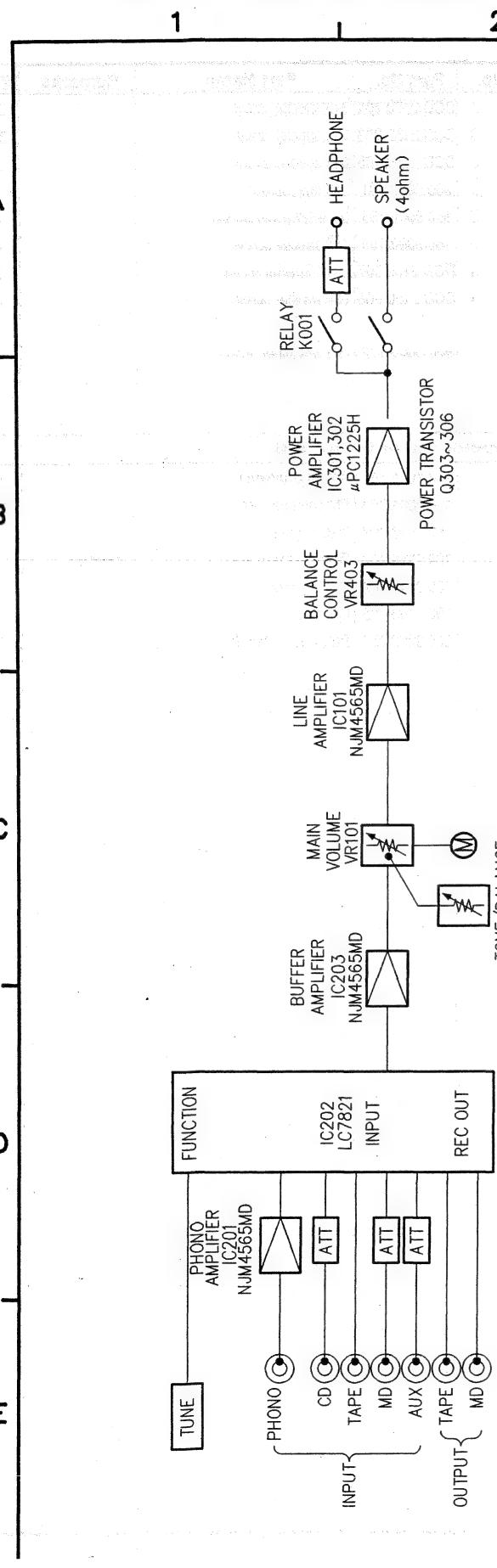
WARNING: Parts marked with this symbol  have critical characteristics. Use ONLY replacement parts recommended by the manufacturer.



PARTS LIST OF EXPLODED VIEW

| Ref. No. | Part No. | Part Name | Remarks | Q'ty | Ref. No. | Part No. | Part Name | Remarks | Q'ty |
|----------|--------------|-----------------------------------|-----------------|----------|----------|--------------|---------------------|---------|------|
| 1 | 960 0050 105 | Remocon senser | | 1 | A | DCD 2150 904 | 3x8 special screw | | 28 |
| 2 | 960 0050 008 | Front P.W.B. Ass'y | | 1 | B | DCD 2150 903 | 3x8 special screw | | 20 |
| 3 | | LED holder | | 1 | C | DCD 2150 905 | 3x8 special screw | | 2 |
| 4 | 960 0001 303 | Power button | | 1 | D | 960 9000 101 | 3x8 tapp screw | | 1 |
| 5 | 960 0048 201 | Function lens | | 1 | E | 960 9000 185 | 3x14 s/washer screw | | 4 |
| 6 | 960 0048 104 | Inner panel | | 1 | F | 960 9000 169 | 4x8 special screw | | 4 |
| 7 | 960 0001 400 | Remocon window | | 1 | G | DCD 2150 907 | 3x17 Special screw | | 2 |
| 8 | 960 0048 007 | Front panel | | 1 | H | DCD 2150 908 | 3x8 washer screw | | 2 |
| 9 | 960 0007 608 | Display window | | 1 | ★ | 960 9000 172 | 4x8 S/washer screw | | 2 |
| 10 | 960 0003 806 | Volume knob | | 1 | | | | | |
| 11 | 960 0048 706 | Control knob | | 3 | | | | | |
| 12 | 960 0051 201 | Button guide | | 1 | | | | | |
| 13 | 960 0048 308 | Function button | | 1 | | | | | |
| 14 | — | TONE volume P.W.B. Ass'y | | (1) | | | | | |
| 15 | — | VOLUME P.W.B. Ass'y | | (1) | | | | | |
| 16 | 960 0003 505 | Foot cushion | | 4 | | | | | |
| 17 | 960 0003 408 | Foot front | | 2 | | | | | |
| 18 | 960 0003 301 | PWB supporter | | 2 | | | | | |
| 19 | 960 0003 204 | Foot rear | | 2 | | | | | |
| 20 | 960 0048 609 | Main chassis | | 1 | | | | | |
| 21 | 960 0048 502 | Rear panel | | 1 | | | | | |
| △ | 22 | 960 0003 602 | AC cord stopper | 1 | | | | | |
| △ | 23 | — | Heat sink | 1 | | | | | |
| △ | 24 | 960 0032 301 | AC cord | 1 | | | | | |
| 25 | — | Heat sink bracket R | | 1 | | | | | |
| 26 | — | Tuner P.W.B. Ass'y | | (1) | | | | | |
| 27 | — | Function P.W.B. Ass'y | | (1) | | | | | |
| 28 | — | Heat sink sub Ass'y | | 2 | | | | | |
| 29 | — | AMP P.W.B. Ass'y | | (1) | | | | | |
| 30 | — | PWB bracket | | 1 | | | | | |
| 31 | — | Heat sink brscket L | | 1 | | | | | |
| 32 | — | Power P.W.B. Ass'y | | (1) | | | | | |
| 33 | 960 0049 307 | Main P.W.B. Ass'y | | 1 | | | | | |
| △ | 34 | 960 0051 104 | Power trans | 1 | | | | | |
| 35 | — | Heat sink sub Ass'y | | 1 | | | | | |
| 36 | — | Heat sink sub Ass'y | | 2 | | | | | |
| 37 | — | Headphone P.W.B. Ass'y | | (1) | | | | | |
| 38 | 960 0000 702 | Top cover | | 1 | | | | | |
| 41 | 363 0206 007 | IC μPC1225H | IC301,302 | 2 | | | | | |
| △ | 42 | 960 0049 501 | AC outlet | A501,502 | 2 | | | | |
| 43 | 960 0004 407 | Jack D3.5 | Jack3,4 | 2 | | | | | |
| 44 | 960 0004 601 | 4P speaker terminal | Jack5 | 1 | | | | | |
| 45 | 960 0004 504 | 4P RCA terminal | Jack201 | 1 | | | | | |
| 46 | 960 0008 209 | ANT terminal | Jack701 | 1 | | | | | |
| 47 | 960 0050 707 | FM tuner FE418-G02 | TU701 | 1 | | | | | |
| 48 | 960 9002 219 | Electrolytic capacitor 4700μF/50V | C25,26 | 2 | | | | | |
| 49 | 960 0002 904 | Jack D6.5 | Headphone | 1 | | | | | |
| 50 | 960 0049 909 | Variable resistor 100kohm-B | Volume | 1 | | | | | |
| 51 | 393 8012 002 | FL display | | 1 | | | | | |
| 52 | 960 0049 705 | Variable resistor 200kohm | Balance | 1 | | | | | |
| 53 | 960 0049 802 | Variable resistor 100kohm-A | Bass, Treble | 2 | | | | | |

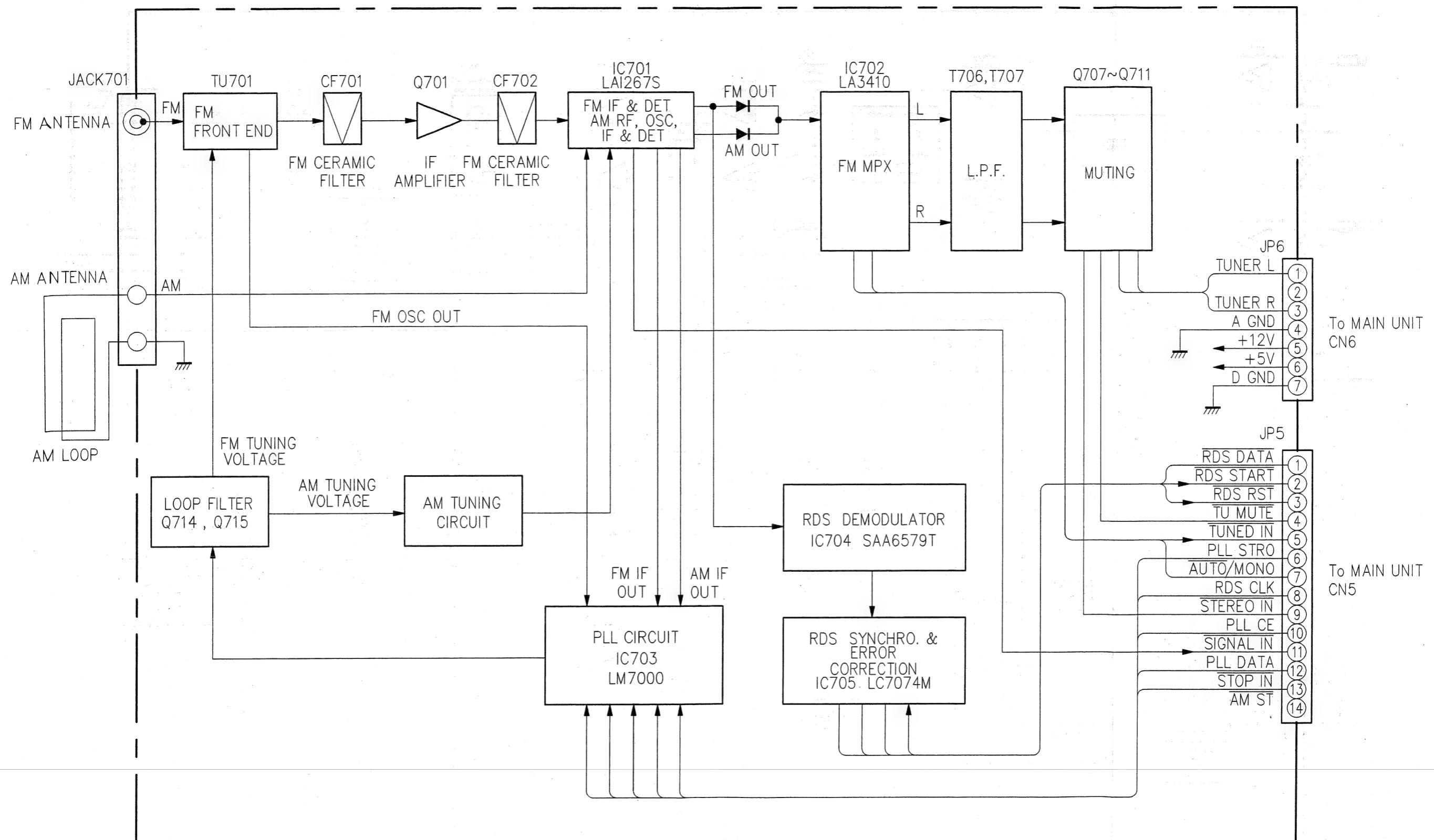
BLOCK AND LEVEL DIAGRAM



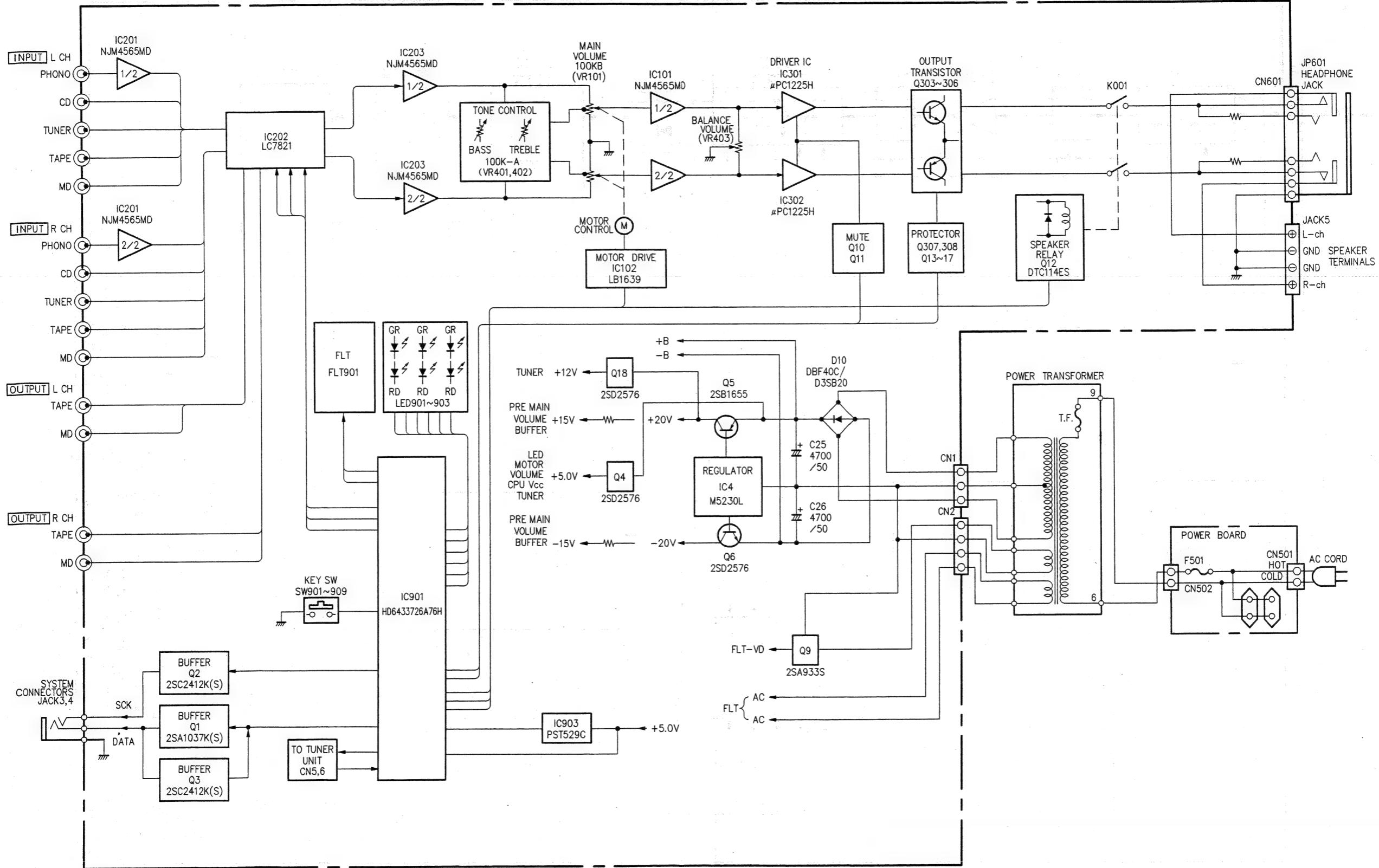
BLOCK DIAGRAM

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Turner Section

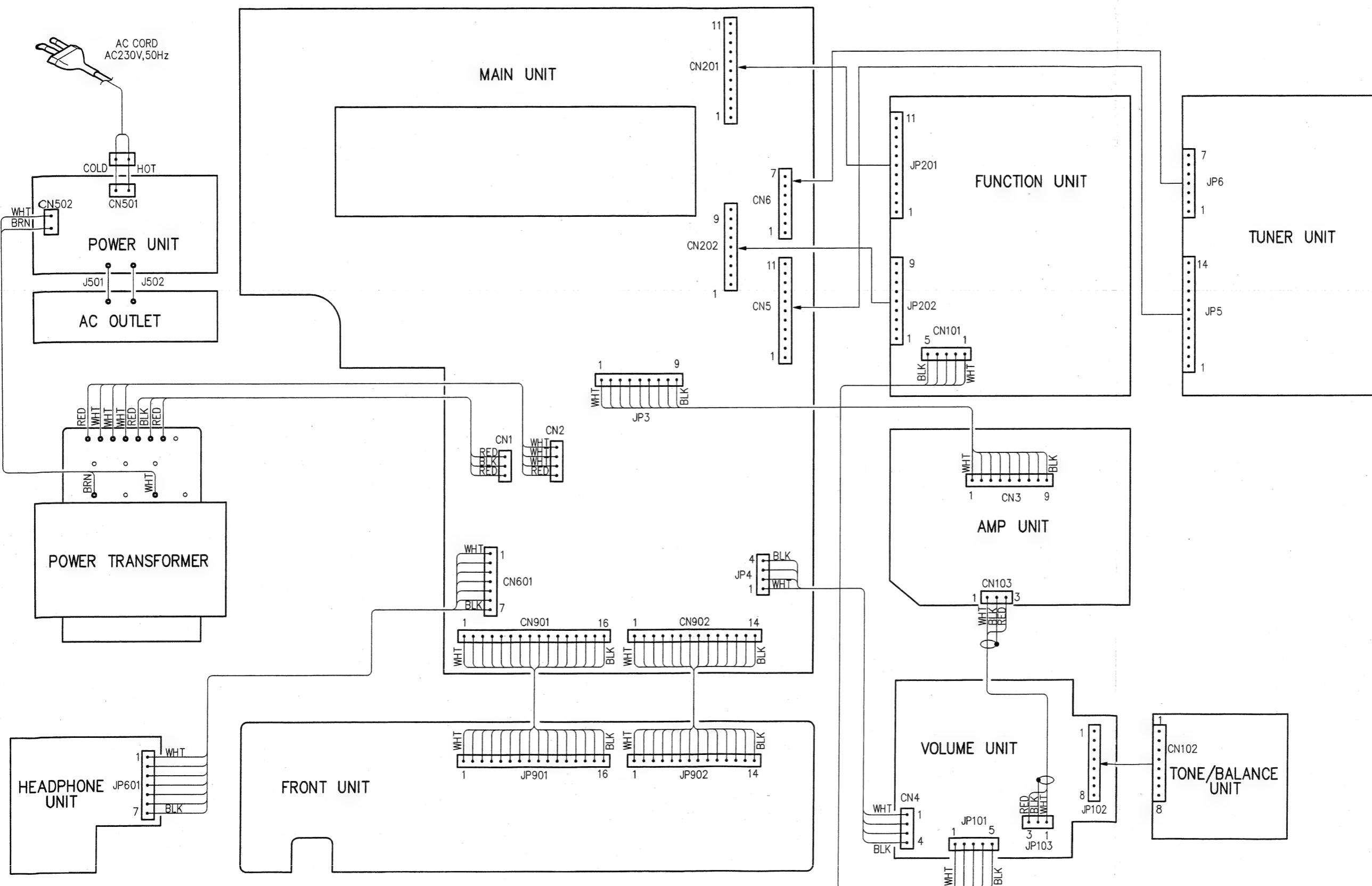


Amp Section



WIRING DIAGRAM

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SCHEMATIC DIAGRAM

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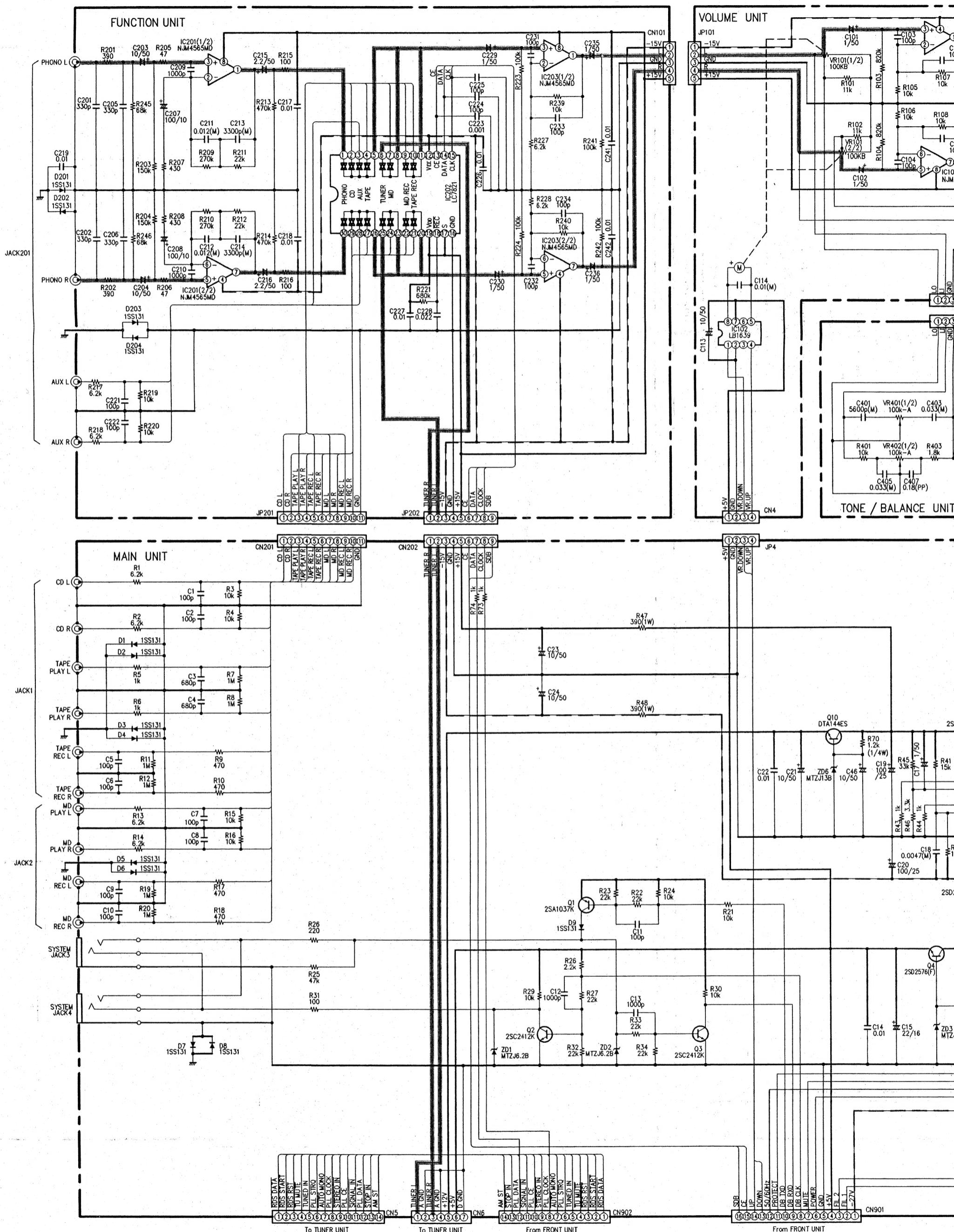
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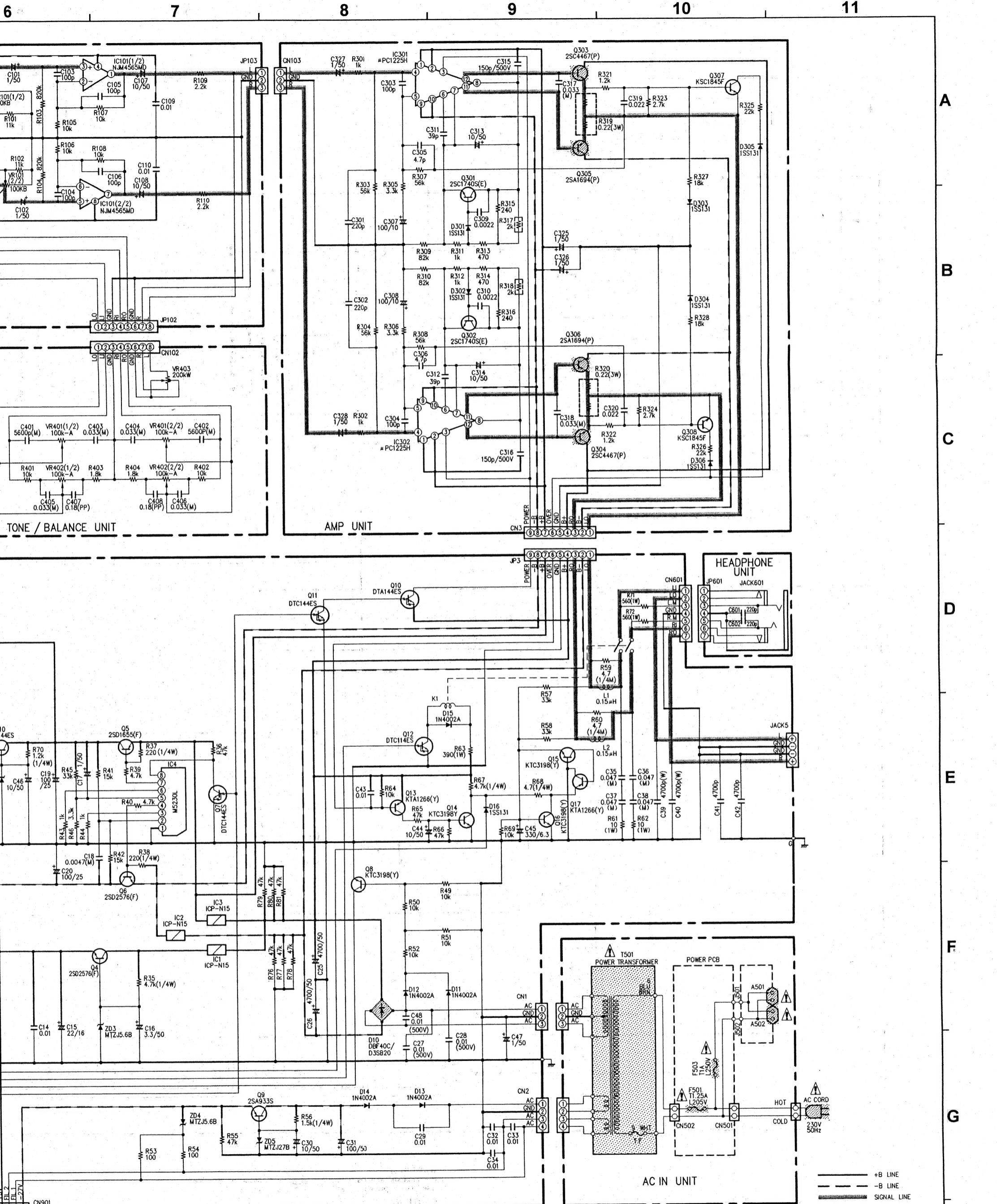
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4

5

6





NOTES
ALL RESISTANCE VALUES IN OHM. k=1,000 OHM, M=1,000,000 OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. P=MICRO-MICRO FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.

WARNING:
Parts marked with this symbol have critical characteristics.
Use ONLY replacement parts recommended by the manufacturer.

CAUTION:
Before returning the unit to the customer, make sure you make either (1) a leakage current check or (2) a line to chassis resistance check. If the leakage current exceeds 0.5 millamps, or if the resistance from chassis to either side of the power cord is less than 240 kohms, the unit is defective.

WARNING:
DO NOT return the unit to the customer until the problem is located and corrected.

SCHEMATIC DIAGRAM

1

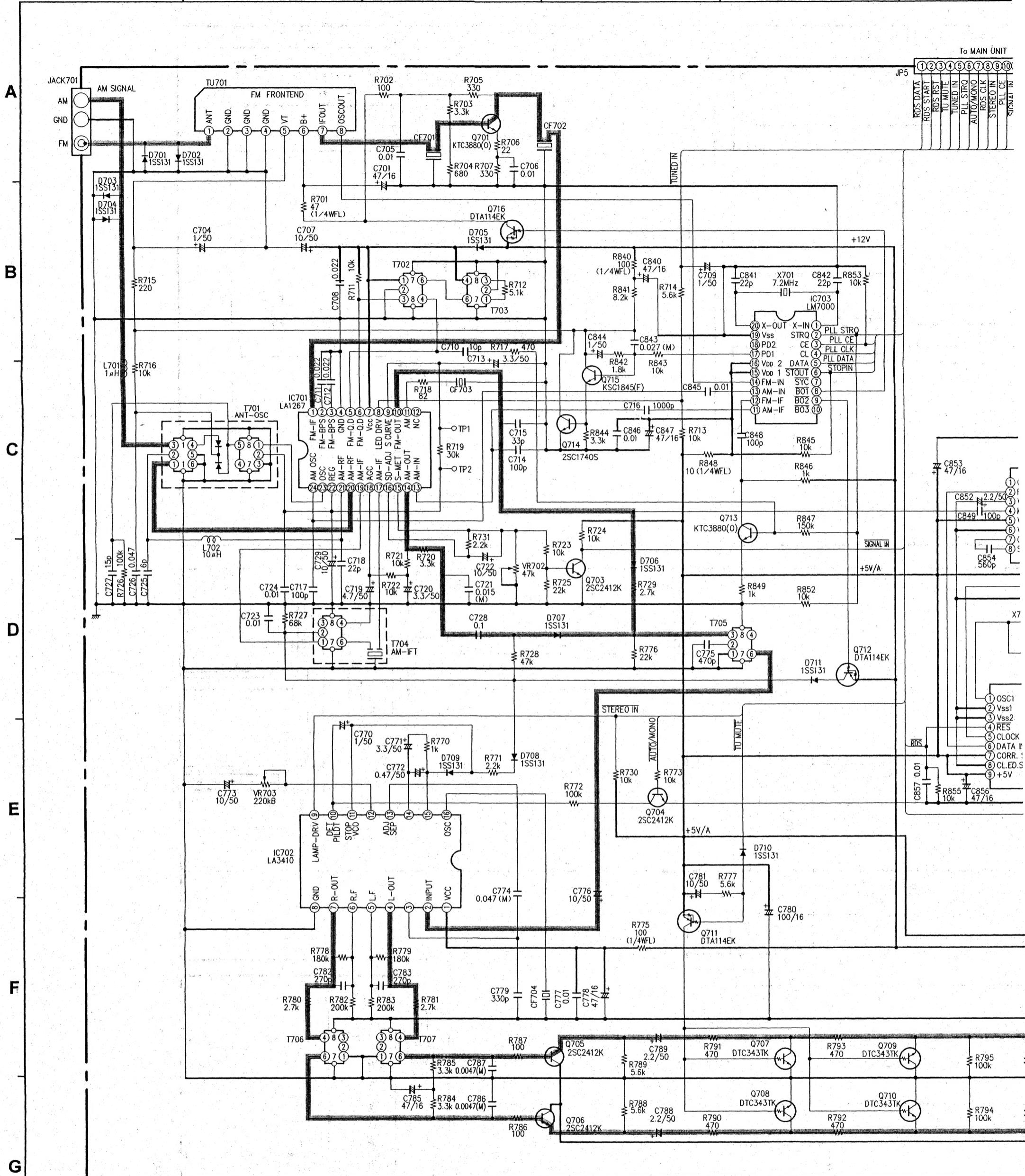
2

3

4

5

6



NOTES

NOTES
ALL RESISTANCE VALUES IN OHM. $k=1,000$ OHM, $M=1,000,000$ OHM
ALL CAPACITANCE VALUES IN MICRO FARAD. $P=MICRO-MICRO$ FARAD
EACH VOLTAGE AND CURRENT ARE MEASURED AT NO SIGNAL INPUT
CONDITIONS

CONDITION.
CIRCUIT AND PARTS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE

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WARNING:
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